

AN ABSTRACT OF THE THESIS OF

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In this study I examined how cognitive biases affect the performance appraisal ratings and recommended actions for an employee in a hiring simulation. The biases that were originally anticipated were self-serving bias, escalating commitment, and cognitive dissonance. There were 170 participants with many being professors and management level employees as well. Results overall did not support my hypotheses. There was slight evidence found for the assimilation-contrast theory as participants who were asked for input into the hiring process rated the employee as doing better than the control group when the employee was performing well, but then rated the employee as doing worse than the control group when the employee was performing poorly. Some demographics were also found to relate to various performance appraisal questions. It was found that management level participants tended to view themselves as doing better at the simulation as compared to others. The participant's size of company related to initial confidence in employee A and shows slight evidence for the possibility of institutional trust affecting first impressions of new organizational members. Overall, even though my predicted biases were not found, this study added additional evidence on how subjective performance appraisals can be, even when the participants had high education and experience.

THE EFFECTS OF COGNITIVE BIASES ON MANAGERIAL DECISION MAKING

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## **CHAPTER 1**

### **LITERATURE REVIEW**

#### **Introduction**

A research and development department head is continuing to invest money and effort into a project that is clearly going nowhere. A manager takes all the credit for a recently completed project, but when a project fails, she blames her subordinates. A CEO has recently decided to merge with another company. After the merger, his opinion of the other company has increased and he ignores the negative information his subordinates are telling him about the merger. Humans are not perfect and can make errors that may result from cognitive biases. These decision-making errors span across all occupations and even professional judges rely on faulty heuristics when making vital decisions (Collins, 2011; Philbin, 2009). An area where there should be even greater focus on decision making errors is the world of business. One study documented that there are more than 70 different mental errors that could occur in the workforce. By studying these errors, researchers can help businesses and workers become more self-aware and make better choices (Carter, Kaufmann, & Michel, 2007).

Businesses can rise above their competitors or completely go under due to bad decisions. One decision can be enough to either wipe out your competitors or sink your company. However, a lot of the study on decision-making biases in the business setting focuses predominantly at lower-level employees. One reason for this could be that lower level employees make more easily defined errors (Wantanakorn, Mawdesley, & Askew, 1999). For example, it is clear when someone on an assembly line messes up and it is relatively easy to spot defects in products and know who is responsible for that part of

production. Thus, it is easier to study the causes of these errors. Higher-level employees, however, deal with harder to define problems. Therefore, it becomes harder to define errors. If the company is losing money, how does the company know whom exactly to blame? Is it poor management, a bad economy, or did the company acquire faulty products from their suppliers? When it is harder to define errors, it is harder to research these errors and the causes of such errors. This might defer researchers from studying the errors of higher-level employees.

Another reason for the focus on lower level employees and how they make errors could be that the people researching these errors are more than likely to be higher-level employees. Researchers may be less willing to study the kind of biases that occur at their organizational level and might want to focus on cognitive errors in others less similar to them. For example, Sims and Gioia (1984) examined attributional errors, but only looked at them from a managerial point of view. They discussed why the manager should be aware of these errors in his or her subordinates and how to spot them in his or her subordinates, but gave no advice on how the manager, should also be aware that he or she could also be susceptible to these biases. Articles that focus on only subordinate biases create an incorrect assumption that people in higher levels are much more sophisticated and do not fall susceptible to such plebeian errors.

This lack of focus on managerial errors is a problem. Managerial positions hold more power and are entrusted with decisions that are more important. If anything, these are the people who should be studied when examining decision-making errors because of the increased importance and risk associated with their decisions. It would be useful to actually evaluate whether employees at these levels are just as susceptible, if not more so,

to decision-making errors. Pissaris, Weinstein, and Stephan (2010) found that higher-level employees fall back on simple but faulty heuristics, even when making a decision as important as deciding on the next CEO. This finding may demonstrate that higher-level employees can be vulnerable to other cognitive biases as well.

Despite the numerous potential errors people can make, I am going to focus in particular on three cognitive biases that can potentially lead to error: self-serving bias, escalating commitment, and cognitive dissonance. All of these can loosely fall under rationalization; defined as using cognitive measures to justify decisions or events. Rationalization was one of Sigmund Freud's defense mechanisms that can be triggered by anxiety when the ego is threatened (Gabriel & Carr, 2002). It has also been shown that stress can increase errors and anxiety may lower open-mindedness (Friedman, 2004; Wantanakorn et al., 1999). This implies that when someone experiences stress, not only will he or she make more errors; he or she will not be as opened minded to criticism. This is of importance because I am going to be focusing on decision-making errors that make the decision maker reluctant to change his or her mind from previous decisions, even when it may be logical to do so.

### **Self-Serving Bias**

Sometimes people tend to blame external factors (such as blaming others) for their failures but attribute their successes to internal factors (such as one's intelligence). This error is the self-serving bias or self-attribution error (Philbin, 2009). The self-serving bias may also include thinking one's self is above average when one is really not, or generally overestimating one's self compared to others.

Klein and Harris (2009) found that the presence of self-affirmation effects makes one more durable against threats to the ego. This might mean that self-affirmation error can make a person less willing to accept counter-attitudinal advice from others. Although one study found that self-affirmation did not boost one's ego (Armitage & Rowe, 2011), another study found that there are different types of self-affirmation and, in particular, attribute-affirmation (focusing on confirming one's qualities and skills) can increase one's self-esteem (Stapel & van der Linde, 2011). In the business sense, attribute-affirmation may be the most common as evaluations of employees focus on their skills. The self-affirmation effect may result from an unconscious effort rather than being planned (Sherman et al., 2011). This means that not only is this effect prevalent, people may not know they are falling prey to this effect.

An example of a study looking at attributional errors found that participants tended to think that if they won the lottery they would become a better person (more charitable), but they thought another person who they were told about would become greedy if she or he won the lottery. This seeing one's self in a more positive light than one sees others relates to self-serving bias (Nelson & Beggan, 2004). Another somewhat related study found that nearly all newlyweds thought their chances of getting a divorce were near zero percent when the actual statistics says that the divorce rate is around 50 percent (Arkin, Appelman & Burger, 1980). This overestimating one's chances of success can lead to detrimental decisions.

This fallacy applies as well to the business world as an inflated opinion of one's self and one's achievement could lead to overconfidence. Most people tend to believe themselves to be in the top 20 percent, which is statistically impossible (Lovallo, Dan,

Sibondy, & Olivier, 2006). When a majority of people believe themselves to be in the top percentage, it is harder for businesses to choose who is actually talented enough to be in a position and who is not. It may lead to managers to view themselves as more competent than they really are and to view others as not as competent. This could lead them to take on more than they can handle.

Another twist of the self-serving bias is actor/observer bias. This bias demonstrates the relationship between how an actor views his or her actions and how an observer views the actor's actions in another way (Sims & Gioia, 1984). For example, if there is a meeting between a supervisor and a worker about the worker's frequent tardies, the worker views the tardies as beyond his or her control. The supervisor views the tardies as the worker's fault. However, when the supervisor who comes in about his or her own tardiness, that supervisor would view the absences as beyond his or her control but their boss would not.

The self-serving bias can affect business related tasks such as job analysis. One study found that participants rated traits and skills in a job more important if they held those traits and skills (Cucina, Vasilopoulos, & Sehgal, 2005). This tendency to view one's self in a more positive light may lead to more risky decisions and reluctance to accept the fact that one has made a bad decision. When one persists with investing in a bad decision, it is known as escalation commitment.

### **Escalating Commitment**

Escalating commitment occurs when one continuously decides to keep investing in a decision, even when it becomes abundantly clear that the decision was not a very wise choice (Biyalogorsky, Boulding, & Staelin, 2006). For example, the research and

development department head who kept putting money into a failing project was exhibiting escalating commitment. A similarly related concept is something called sunk costs. This is when people look at how much they invested in something and this causes them to be even more reluctant to give up that particular investment (Moon, 2001).

Project completion is the perceived closeness to the end goal and one study thought that this was the main cause of escalating commitment (Ting, 2011). However, another study has shown that both project completion and sunk costs contribute to escalating commitment (Moon, 2001). This means that even when one does not perceive that she or he is closer to her or his goal than before, if one looks at what one has already invested, one is more likely to persist even if one is not closer to one's goal.

Escalation of commitment might come about by one trying to justify one's initial decision, trying to save face, or, after making the initial decision to commit, misinterpreting future information (Biyalogorsky et al., 2006). In a business sense, a manager making a decision might want to justify that decision more so (either to him/herself or to his or her workers) because more is riding on that decision (such as his or her reputation). A manager might not want to back out of a decision in order to appear more confident to his or her superiors or a manager might become biased towards information that justifies his or her initial decision. When looking at escalating commitment from a hiring viewpoint, one study found that escalating commitment could account for 6 percent of the variance in performance appraisal scores due to managers' involvement in the hiring decision (Schoorman, 1988).

Manez, Rochina-Barrachina, Sanchis, and Sanchis (2009) found that sunk costs could impact the money invested in research and development, especially in larger

companies. Perhaps the fact that this error is more prevalent in larger companies could be due to having more at risk and more invested in the company. There has been evidence that shows if one is made aware of one's extensive investment in an activity, one is less likely to quit that activity. Chiou and Wan (2007) found that gamer addicts who were reminded of the amount of effort they spent on the game were less willing to give up their addiction. In this case, making a businessperson aware of his or her sunk costs will make him or her more willing to persist with a project. Just looking at one's sunk costs can lead to one to be more willing to stick with a poor decision (Whyte, 1991).

What is even more worrying about this effect is that rational thinking may not help alleviate this bias. One study found that those who scored high on a rationality score were actually more susceptible to escalating commitment errors than those who did not score as high (Wong, Kwong, & Ng, 2008). Considering that managers are (usually) considered rational people, again, this bias might be even stronger for them.

Most studies of escalating commitment focused on the negative side, that is, how people are willing to invest in failing projects despite being presented with information contradicting their decision. One study found that college students invested more in projects that they chose to initially invest in (compared to a group who were assigned a project) only if they received negative information (Staw, 1976). This might mean that they needed to justify their failing decision by further investing resources into it. Again, this viewed escalating commitment as an undesired effect. However, Sandelands, Brockner, and Glynn (1988) viewed escalating commitment as a good thing because it increases persistence, but as mentioned before, Staw (1976) found that this persistence only occurred when negative feedback was given. Thus, escalating commitment seems to

focus more on persisting in bad decisions rather than good decisions. To view escalating commitment in a good way, it is possible a manager might have actually made a good decision, but is wrongly told that it is not a good decision, but then he/she stubbornly persists with it and is ultimately proven correct. This would be one of the few situations in business where escalating commitment could be positive for a company. For example, when Amazon CEO Jeffrey P. Bezos was increasingly investing in his company to grow it bigger and bigger even if he was not making a profit, many people criticized his decisions and told him it was a bad choice. However, his decision was actually very profitable in the end and is an example where escalating commitment can be positive (Jeffrey P. Bezo, 2010).

Schoorman (1998) mentioned the concept of negative escalation of commitment. In the aforementioned cases, one confirms a decision and continues believing that decision was right. These would be examples of positive escalation of commitment. Negative escalation of commitment is when a person decides a decision is a bad idea and continues to view the decision as a bad idea, even though information might say otherwise. In Schoorman's study, there were three main groups. Some of the supervisors were part of hiring process, but did not have their preferred candidate assigned to them. Other supervisors were not part of the hiring process at all or did have their preferred employee. The former supervisors rated their assigned employees lower than the latter supervisors rated their assigned employees did. However, this was not an actual study and the sample size was low. It might be useful to further investigate this concept of negative escalation of commitment, as it seems to be lacking in the research literature.

Whether it is positive or negative, escalating commitment might be a way to reduce the dissonance one feels when one finds challenges to one's decision (Moon, 2001).

### **Cognitive Dissonance**

Cognitive dissonance is defined as when one's beliefs and/or behaviors do not match (O'Keefe, 2002). For example, if one believes himself or herself to be smarter than average (self-serving bias) and then makes an unintelligent decision, he or she will experience dissonance between the smart-person belief and the unintelligent decision. Because dissonance is unpleasant, it would motivate the person to find some way to reduce the cognitive dissonance. For example, the person might invest more in the decision (escalating commitment) in order to tell himself or herself and others that it was a good idea and that he/she is a smart person. Cognitive dissonance could also lead people to become more confident in a decision after making a decision, even if there is no new information confirming their position (Wong, 2009).

Some studies have found evidence that cognitive dissonance may not be a conscious mental process, but may be more automatic (like attributional biases are) (Coppin, Delplanque, Cayeux, Porcherot, & Sander, 2010; Egan, Santos, & Bloom, 2007; Lieberman, Ochsner, Gilbert, & Schacter, 2001; West, Jett, Beckman, & Vonk, 2010). One such study found that when one group was under heavy cognitive load (had to think about other topics) their rate of cognitive dissonance did not differ from the group who had a light cognitive load (was not given other topics to think about) (Lieberman et al., 2001). This supposedly shows that the phenomenon of cognitive dissonance takes little to no mental effort on the part of the participant. There are even researchers who suggest that cognitive dissonance may be innate as it has been demonstrated in primates and

young children (Egan et al., 2007; West et al., 2010). Another study showed that even preferences for odors may be affected by cognitive dissonance and the authors suggested that cognitive dissonance might be applicable to multiple situations (Coppin et al., 2010).

Cognitive dissonance may also appear differently in certain situations across cultures. Eastern culture is viewed as more focused on harmony and interdependence, while Western culture is viewed as more focused on individuality and independence. Two studies found that people who identify with Western cultures experience more cognitive dissonance when making a decision for themselves, while people who identify with Eastern cultures experience more cognitive dissonance when making a decision for others (Hoshine-Browne, Spencer, Zanna, Zanna, & Kitayama, 2005; Wong, 2009). Interestingly enough, those who were bi-cultural (identified with both Western and Eastern cultures) switched their experience of dissonance to match the culture they were currently in (Hoshine-Browne et al., 2005).

Leon Festinger (1959) was the first to study this phenomenon. He found that when he paid participants twenty dollars to tell other participants that a boring study was fun, they were less likely to believe it was fun compared to a group that was paid one dollar to do the same thing. Festinger argued that less cognitive dissonance occurred in the twenty dollars group because they could reason that they said the untrue statement to someone else to get a fair amount of money, while the one-dollar group did not have enough of a money incentive to adequately justify their behavior to lie to another participant. In turn, they changed their beliefs to believe the study was more fun than it really was in order to match their behavior, so dissonance is reduced.

When people experience cognitive dissonance, they are motivated to reduce the negative effects associated with dissonance. One way to reduce these negative effects is to change one's beliefs to match one's actions (such as when the group who received only one dollar decided the puzzle was more fun than it actually was). A person can also add new information to support his or her behaviors or beliefs in order to justify his or her initial way of thinking or acting. A person may also minimize the importance of anything that is conflicting with his or her beliefs, which is called trivialization (Festinger & Carlsmith, 1959). Others have also found that misattribution has been found to reduce cognitive dissonance. Misattribution is finding a way to place blame for your contradictory actions on external circumstances, for example, attributional errors could reduce dissonance (Fointiat, Somat, & Grosbas, 2011).

If a manager makes a decision and is told by another business person that his or her decision is not going too well, he or she may feel the need to invest more in the decision (so his or her behavior will match his or her initial belief that a good decision was made and he/she is a competent business person). Or the manager may think less of the business person who provided the information in a way to trivialize the dissonance. The manager may look for people who agree with him or her in order to counterbalance the negative information and lower dissonance (adding new information). The managers may also blame the fact that his or her decision is not going well on others (misattribution) or the manager may decide that he or she was pressured into the decision, or that the decision is not going well from lack of support.

As the business world is a high-risk environment, this concept of cognitive dissonance is particularly important. When one engages in risky behaviors, he or she can trivialize the risks in order to justify the behaviors (Huebner, Neilands, Rebchook, & Kegeles, 2011). Connecting this back to self-serving bias, not only would risky behaviors lead to trivialization, but people will also tend to overestimate their chances of success and their competence (Philbin, 2009). Rosenfeld, Kennedy, and Giacalone (2001) found that people who have made their decision regarding how many gumballs were in a jar rated their chances of winning higher than those people who were asked their chances of winning before they made the decision,  $F(2,55) = 5.70, p < .01$ . The persistence of cognitive dissonance can also be a concern for the business environment, as one study found the cognitive dissonance still lingered in the participants three months after the initial study and another study also furthered the evidence of the long term effects of cognitive dissonance (Becker, Smith, & Ciao, 2006; Salzberger & Koller, 2010). This might indicate that when a manager makes a decision, his or her reluctance to accept the decision as bad could be long lasting.

A related decision-making error that could relate to cognitive dissonance is the foot in the door effect. This effect states that when one does someone a little favor, that person is more likely to do a bigger favor later (Freedman & Fraser, 1996). This might relate to cognitive dissonance because saying “no” to the bigger favor, after having already given the smaller favor, might cause dissonance, so the person would be more willing to accept the bigger favor to reduce the dissonance. This could relate to hiring practices in business, as those who have hired a person might be more willing to promote that person over someone they did not have a voice in hiring, or one might let the person

he or she hired get away with more blunders, because they have made that initial investment in the employee.

Another factor that increases cognitive dissonance is how responsible the person feels for the decision. When one feels that he or she is more responsible for a decision, he or she will feel more cognitive dissonance and will display more cognitive dissonance reduction techniques (McMillan, Stice, & Rhode, 2011). This is especially relevant to upper level employees because they usually have more responsibilities and, thus, could actually be more susceptible to cognitive dissonance than lower level employees could.

Cognitive dissonance is also associated with how much the person was aware of the possible outcomes of his or her decision. Goethals, Cooper, and Naficy (1979) found that when participants are aware of the possible outcomes of a counter-attitudinal speech they made, they had more cognitive dissonance than the group of participants who were not told of any possible outcomes that could have come from their speeches. This might be due to the fact that a person can use the fact that they did not know of the outcomes as a way to reduce any possible dissonance, while those who knew of the consequences had to find other ways of reducing the dissonance (such as agreeing with the speech they made).

Self-esteem may also affect the strength of cognitive dissonance in people. However, different studies have found different effects. One study found that high self-esteem increased the strength of cognitive dissonance (Steele, Spencer, & Lynch, 1993). These researchers explained this by the fact that people with low self-esteem are less motivated to reduce their negative feelings about themselves. Another study found the opposite effect. Those with low self-esteem had stronger cognitive dissonance (Martinie

& Fointiat, 2006). These researchers concluded that this happened because people with high self-esteem were able to reduce their cognitive dissonance elsewhere, rather than having to justify their decision. For example, they view themselves as a good person to reduce dissonance. However, people with low self-esteem did not have other attributes they can use to reduce their dissonance and had to reduce dissonance by being more confident in their decision rather than themselves. Either way, acknowledging that self-esteem might play a role in cognitive dissonance is important to keep in mind.

Dissonance reduction does not occur in all circumstances. For instance, emotional dissonance is when one's outer emotions do not match one's inner beliefs. In emotionally laborious jobs, for example, where a person might need to smile all the time even when he/she is not happy, there is no dissonance reduction and the dissonance leads to stress and other negative consequences (Pugh, Groth, & Hennig-Thurau, 2011). If emotional dissonance reduction could occur, one would change his or her mood to match the fake smile. In positions where dissonance between beliefs and behaviors are inevitable and not harmful, cognitive dissonance might be an acceptable coping strategy rather than a cognitive error. This leads into how cognitive dissonance might be useful for businesses rather than harmful.

There has been research on using cognitive dissonance in different intervention and preventative programs in order to reduce unhealthy behaviors (Becker et al., 2006; Chiou & Wan, 2007; Fointiat et al., 2011; Gibbons, Eggleston, & Benthin, 1997; Huebner et al., 2011; McMillan et al., 2011; Stollefson, Wang & Klein, 2006). One article also stated that using the concept of cognitive dissonance might help others become more invested in organizational change. When employees are more involved

with the decisions being made in the organization, they could be more invested and, thus, be motivated to reduce their dissonance about the change in the organization by actively encouraging and going along with the change (Burnes & James, 1994).

There has been some debate on the exact effects of cognitive dissonance. While traditional cognitive dissonance theory states that attitudes change after a decision is made, others feel that the increased dedication to the decision begins before the decision so that the perceived effect of changing beliefs and/or behaviors occurs in the pre-decision phase instead of the post-decision phase (Brownstein, 2003; Festinger & Carlsmith, 1959). This means that changing beliefs would not be due to the actual decision but due to the mental processes that come before the decision.

It is important to understand that managers do not work in isolation. People and resources they can use in order to optimize decision-making surround them. However, when biases occur in people, the question then becomes how effective are these resources in undoing the negative effects of these psychological fallacies.

### **Causes of Decision-Making Biases and the Role of Information**

Sadly, it seems that even when people are faced with conflicting information, they rarely end up changing their initial decision (Friedman, 2004). Some researchers opine that people intentionally seek out information that confirms their initial decisions and beliefs in order to reduce cognitive dissonance (selective attention). However, Schultze, Pfeiffer, and Schulz-Hardt (2012) found that the search for information is not biased, but the interpretation of information is biased. When given the choice of which articles a participant wanted to view, the participants chose both articles that supported their initial investment and articles that gave arguments against it. However, they rated the articles

that supported their point of view as more accurate and reliable. In other words, the participants readily accepted the articles that agreed with their opinion, but were overly critical of articles that did not agree with their opinion.

In another study, college students read articles that agreed with their choice of college and another group of college students read articles that disagreed with their choice of college. While the group who had the negative article did not change their opinion on choice of college, the group who read the positive article increased their satisfaction in their choice (Mao & Oppewal, 2010). This again shows that conflicting information may have little to no influence on the decision maker. If anything, it may increase one's confidence in the decision.

Something that could impact the effect information has on a person could be how the information is framed. When information is made to look like a possible loss, people are more willing to make a riskier decision than when the same information is made to look like a gain (Whyte, 1991). For example, a ten percent gain in shares could be stated as a good thing, but if it is put next to the fact that a competitor had a fifteen percent gain in shares, the same information now looks like the company is not doing as well. The way information is made to look affects how people use the information in their decisions. This framing effect is important in the business world because information that is framed in negative terms could lead business leaders to take unnecessary risks that could negatively impact their company.

Although organizations are defined as a collected group of individuals, usually a select few make the bigger decisions. These decision makers do have feedback available for them to potentially use, but when they acknowledge only the information that agrees

with their initial decision, and reject information that does not agree with their decision, then there could be very negative consequences.

Something that was common among these effects is what might be causing these biases. Two main theories of these effects seem to be whether these are genuine defenses of the ego (the self-esteem view) or whether these effects are simply to make yourself look better to others (the self-presentation view) (Tetlock & Levi, 1982). Studies have found support that both self-esteem and self-presentation affect the prevalence of these biases (Arkin et al., 1980; Rosenfeld, 2001). In particular the self-esteem theory is reinforced by the many experiments that examine how these effects could be unconscious rather than intentional (Coppin et al., 2010; Egan et al., 2007; Lieberman et al., 2001; Sherman et al., 2009; West et al., 2010).

### **Business and Psychology**

Industrial/organizational psychology (I/O) is a field that uses psychological principles and applies them to the business setting. Despite their mutual focus on business, the fields of business research and I/O psychology research do not seem to converge as much as they should. If these fields do not learn more about each other, then they will lack essential information and be less able to solve problems.

One thing that would help increase the applicability of information about psychological principals to the world of business is more psychological research in business settings. One of the few studies I found in psychological journals that applied the effect of cognitive dissonance to a business setting did not intend it to apply to business (Brehm & Wicklund, 1970). This study was published in a psychology journal rather than a business journal and seems to be basic research where the researchers'

primary goal was to demonstrate how salience can increase regret. The researchers used the simulation of hiring decisions to show the salience of the decision to participants by presenting them with a photo of the people they hired. Neither the introduction nor the conclusion mentioned any implications for businesses from these findings, even though the simulation included business-making decisions (Brehm & Wicklund, 1970). Having more psychological research that focuses on applying theories to solve real world problems, rather than just demonstrating the existence or absence of the theories could help psychology be of more use to other fields.

It might also help if the business field made itself more aware of psychological concepts. For example, one business article (Carter et al., 2007) listed many of the possible decision errors that managers could make. They mentioned some of the earliest studies done on decision making errors, and then cited articles from the 1970s. If Carter et al. had explored studies outside of the business field, they would have found that psychologists had been studying decision-making errors far earlier than the 1970s. Research on cognitive dissonance alone was made in the late 1950s (Festinger & Carlsmith, 1959). I had little trouble finding cognitive dissonance research that concerned marketing applications, but it was harder to find articles that applied cognitive dissonance to one's own employees, let alone applying it to management (Dick & Lord, 1998; George & Yaoyuneyong, 2010; Hunt, 1970; Mao & Oppewal, 2010; Salzberger & Koller, 2010).

During the composition of this literature review, I found some studies that demonstrated a lack of scientific methodology. One of the business "studies" I found in a business journal discussed the possibility of leaders deciding to lay off employees feeling

cognitive dissonance; however, it was not a research study (Parker & McKinley, 2008). Even an article I found in the *Journal of Management Research* provided many propositions, but again lacked real research (Pissaris et al., 2010). Another article in *Public Personnel Management* that was actually an empirical research study started off spending a considerable amount of space explaining what a correlation is (Miller & Thornton, 2006). A study that did look at how cognitive dissonance applied to managers examines how that might lead managers to over pay employees, but the focus was more on saving money by decreasing subordinates' pay, rather than on making better decisions (Smith, 2009).

This lack of research on how these psychological principles apply to business decision making could lead to less informative decisions. Lack of information about these biases may managers to be less aware of when they are making these errors (Sherman et al., 2009). When looking at the specific cognitive errors in making decisions, upper level employees may be particularly susceptible.

One study found that people who were more likely to take risks were attracted to majoring in business (Philbin, 2009). Risks are not always a bad thing, but a person needs to have enough self-awareness to know when a risky decision may not have been the best choice. One study showed that type A people (people who are ambitious and achievement striving) are more likely to exhibit escalating commitment (Schaubroeck & Williams, 1993). Type A people may be more likely to be put into positions of power because of their ambitiousness, meaning they would be making the bigger decisions in a company, yet at the same time these people could be more vulnerable to these decision making biases.

There is also a chance that people who admit their mistakes are less likely to receive a promotion to get into these higher-level positions. People who persisted with their decisions received higher rating than people who did not stick with their decisions (as cited in Sandelands et al., 1998). This would discourage employees from changing their decisions, (the self-presentation argument) and it would make employees who actually acknowledge when they make a mistake look bad, and give people who are more willing to cover up their mistake an advantage (Bobocel & Meyer, 1994).

Confidence can also play a role in these errors. Companies often want confident people, but it is sometimes difficult to distinguish those who are falsely confident in their abilities and those whose confidence is justifiable. For example, people with less skill tend to overestimate their abilities, while skilled people tend to underestimate their abilities. This could lead to difficulties distinguishing whose choice is the correct one. One study demonstrated this by finding that people who tested in the bottom quarter of test scores still thought of themselves as being above average,  $t(150) = 10.33, p < .001$ , (Kruger & Dunning, 1999). One of the reasons given for this effect is that those without skill do not have the knowledge to properly evaluate themselves, but maybe this overconfidence could be a way to reduce cognitive dissonance as well (Ehrlinger, Johnson, Banner, Dunning, & Kruger, 2008). This effect is especially prevalent when the skills are abstract rather than concrete. This is very relevant to managers because they deal more with abstract problems and this allows for more bias to occur because of the ambiguity of many of the decisions managers have to make (Dunning, Johnson, Ehrlinger & Kruger, 2003). Doukas and Petmezas (2007) found that overconfident participants who made bids had poorer long-term gains than those who were not so confident. These

findings apply to businesses. People are often more likely to hire and promote confident employees, yet this confidence may result in more cognitive biases. One study found that managers generally rate other managers as being over confident, but not themselves, of course (Libby & Rennekamp, 2011).

Another problem is that upper level employees might be more likely to hire people like themselves (and these new hires would be more likely to agree with them on decisions) due to self-serving biases (Cucina et al., 2005). So not only will cognitive biases make people less willing to consider opposing opinions, they might not even be faced with opposing beliefs because people tend to hire and promote people who think like them. Because lower level jobs are easier to assess than higher level jobs (Miller & Thornton, 2006), the most important jobs are the hardest to properly evaluate and make hiring decisions.

It is getting harder and harder to deny the impact businesses and corporations have on society. It is especially important to make sure that businesses make ethical decisions, but some research has shown that unethical decision-making increases as escalating commitment increases (Armstrong, Williams, & Barrett, 2004; Street, Robertson, & Geiger, 1997; Street & Street, 2006). A study done by Rabl and Kuhlmann (2009) had participants play a business game simulation. In a game where little was at stake, over 80 percent of the participants acted unethically at least once and then subsequently used various forms of rationalization to justify their unethical choices.

Unethical behavior is not the only side effect of these biases. Having these biases in hiring and evaluation system can affect employees' views of the organization. Inaccurate performance appraisals due to biases will have a negative impact on

employees' views of organizational fairness and justice (Eberlin & Tatum, 2005; Miller & Thornton, 2006). Organizations with different cultures have different ways of evaluating and hiring employees (Appelbaum, Roy, & Gilliland, 2011). Not having an understanding of an organization's appraisal and hiring systems can lead to undesirable impacts because negative views of performance appraisal could lead to decreases in job satisfaction and possibly decreased job performance.

I have only mentioned a few biases and errors that could affect management decisions, but there exists many others as well, such as leniency errors and the halo effect (Appelbaum et al., 2011). Because decision-making is one of the main duties of managers, I feel it is important to look at how these effects can influence managerial decisions such as performance appraisals (Dinur, 2011). Even with all these biases, management ratings are still better than many other ratings, such as subordinate and peer ratings (Miller & Thornton, 2006). However, it is useful to look more at the possible errors one can make and how to prevent them. Performance appraisals alone are used for many important decisions, such as promotions, determining pay, and even termination, and, thus, accurate and well-formed decisions for performance appraisal can have a massive effect on the organization's well-being (Appelbaum et al., 2011).

### **Research Methods**

There are many different ways to study these biases and each method of research has its own advantages and disadvantages. I am going to review some of the methods that have been used to study the effects of self-serving bias, escalating commitment, and self-serving bias.

One reoccurring problem in studying these cognitive biases is that trying to measure these biases might influence or even cause the biases. For example, trying to measure cognitive dissonance directly through a questionnaire may actually cause cognitive dissonance instead of just measuring it (Salzberger & Koller, 2010). This method of directly asking items such as “how much regret do you feel after this purchase” seems to be more popular with business fields, especially the marketing research on cognitive dissonance.

Psychological research tends to be more subtle about what the researchers are measuring. This deception reduces the likelihood of inducing the effect a research is trying to measure, but a downside is that it would be more difficult to demonstrate the research is actually measuring the concept he or she wants to measure. Some of the popular ways to measure cognitive biases that psychologists use are the free-choice paradigm, simulations, and environmental studies.

The free-choice paradigm is where a participant chooses between two equally appealing options and, according to cognitive dissonance theory, his or her opinion of the choice should improve, while the option he or she did not choose becomes less desirable, even though he or she initially rated the choices as equal (Egans et al., 2007). This is a very subtle way to go about measuring cognitive error, but there are some complaints that it does not adequately measure cognitive dissonance (Chen & Risen, 2010). However, another article provided a rebuttal to these acquisitions, but it is still useful to triangulate different methods in order to measure the same effect (Sagarin & Skowronski, 2009).

In order to try to make these effects resemble real life, some researchers choose to create simulations that emulate real life experiences and, hopefully, emulate real life

biases. Simulations seem to be particularly useful for escalating commitment research. One study that used a simulation found that if participants paid a membership cost for a store, they were more likely to shop at that store, despite similar prices at other stores (Dick & Lord, 1998). Another simulation found that 63 percent of the participants were willing to keep paying for a medical treatment, rather than using a more effective and free method (Coleman, 2010). One downside to simulations is that in both of these experiments the participants were not actually spending their own money, so there is still the question of whether this effect can be demonstrated when people are actually investing their own money.

Though it is harder to control for extraneous variables, environmental studies explore psychological effects as they play out in real life. One study altered the price of theater tickets and found that people who paid more for the tickets attended more productions, showing how cognitive dissonance made the participants want to reduce their dissonance of paying a high price for the tickets by attending more shows (Arkes & Blumer, 1985). Another way to study psychological effects is to look for trends or use data to test hypotheses. For example, one researcher wanted to see if cognitive dissonance occurred in judges by studying when they were most likely to write a piece on why they made a certain decision (Collins, 2011). Collins viewed writing a piece as a form of cognitive dissonance reduction and found that when judges made decisions that conflicted with their usual political views, they were more likely to write about it. Another field study found that managers who hired their own employees, rather than being assigned one, rated the employees they hired higher than the employees they did not hire. This supposedly showed cognitive dissonance because rating the employee they

hired higher was a way to justify their hiring decision (Schoorman, 1988). Another downside to these two previous field studies is a lack of control, as they both looked at data after the fact and made conclusions from it.

Bazerman, Beekune, and Schoorman (1982) investigated whether prior commitment to an employee affected performance evaluations in a simulation with 298 business majors. This is very similar to what I did for my study. The researchers asked the experimental group to hire one of three candidates and the control group was told that someone else made the decision. When the participants hired someone, they were in the high responsibility condition, and when they were assigned someone, they were in the low responsibility condition. They measured dependent variables such as the appropriateness of this employee getting a raise, being promoted, getting more vacation time, being demoted, and being laid off. People in the high responsibility condition gave their employees higher pay increases,  $F(1,294) = 5.33, p < .05$ , more vacation time,  $F(1,294) = 13.32, p < .001$ , and rated them better for promotions,  $F(1,294) = 7.27, p < .001$ . The mean for promotion potential given to the employee by the high responsibility group was 4.56 while the low responsibility group had a mean of 3.87. The high responsibility group was also less likely to demote the employee,  $F(1, 294) = 16.15, p < .001$ , or lay off the employee,  $F(1, 294) = 5.74, p < .05$ . Various effects (such as cognitive dissonance) might have come into play to cause the people who were more invested in their employees, the high responsibility group, to rate them as overall better employees than those who were less invested.

Overall, using various methods to examine these psychological effects can help support the generalizability of these theories. I used a simulation to determine if these psychological effects display themselves in hiring and performance appraisal decisions.

### **The Current Study**

The purpose of this study was to apply psychological principles to the business setting in order to add more knowledge to the field of I/O psychology. In particular because of lack of research that focuses on managerial decisions I wanted to study how cognitive biases can affect decisions that management face, particularly cognitive biases that are typically not attributed to selection and performance appraisal situations.

This study aimed to show if ratings of employees differ due to the participants' initial involvement. This initial involvement or lack of involvement could affect confidence in employees, performance appraisals, and one's self confidence and one's own performance.

Studies have shown that an initial investment in a decision leads to one being more confident in that decision even without receiving any new information to confirm one's choice, especially choices that were hard to make. Becoming more confident in one's decision is one way to reduce the cognitive dissonance one can feel after a difficult decision (Chiou & Wan, 2007; Festinger, 1959; McMillan et al., 2011; O'Keefe, 2002).

*Hypothesis 1:* Participants who recommended an applicant and then are assigned that applicant will have more initial confidence in that employee than participants who had no initial input into the hiring decision and then are assigned that same applicant.

Cognitive dissonance may also work the other way where if a participant made a decision but then her or his decision was not accepted, she or he may still become more confident in the initial decision possibly due to threats to the ego.

*Hypothesis 2:* Participants who recommended an applicant but then are assigned a different applicant will have less initial confidence in that employee than participants who had no initial input into the hiring decision and then are assigned that applicant.

Escalating commitment is also related to involvement in that when one have been involved in a certain investment one tends to one to keep investing in it even when there is good reason to stop. Particularly, this negative feedback to one's initial investment may actually increase one's commitment (Staw, 1976). Studies have found that investment in an employee can lead to biased performance appraisals possibly due to this effect (Bazerman et al., 1998).

*Hypothesis 3:* Participants who recommended an applicant and then are assigned that applicant will be more lenient towards that employee during performance appraisals than participants who had no initial input into the hiring decision and then are assigned that applicant.

Escalating of commitment usually refers to when one has agreed with the initial investment, however, there is also the less studied concept of negation escalation of commitment. This refers to having an initial disagreement with a decision and persisting with that disagreement. Despite lack of statistical power, one study did find enough evidence of this concept in relation to performance appraisal that I feel warrants more study (Schoorman, 1988). Negative escalation of commitment could lead to one have

negative views of an employee because one did not originally agree with the hiring choice.

*Hypothesis 4:* Participants who recommended an applicant and then are assigned another applicant will be more severe towards that employee during performance appraisals than participants who had no initial input into the hiring decision and then are assigned that applicant.

Self-serving bias can refer to one having a more positive view of one's self than may necessary be true (Nelson & Beggan, 2004). People tend to overestimate their abilities when comparing themselves to others (Lovallo et al., 2006). I believe that may relate to the other two cognitive errors in that they all relate to protecting one's sense of worth. Therefore, having a sense of worth threatened by making a bad hiring decision could lead to one overestimating one's actual performance. It would be interesting to study this to try to further the possible explanations for the Dunning-Kruger effect. This effect is when an incompetent person overestimates their ability to perform. The finders reasoned that it may be due to lack of knowledge to properly evaluate themselves but I think there might be some possible ego defense issues that could also contribute to this overestimation of one's ability.

*Hypothesis 5:* Participants who recommended an applicant and then are assigned that applicant will view one's self as doing better on the simulation compared to participants who had no input into the hiring process.

It is also possible that even if participants acknowledge their failure if they did recommend and hire an employee who then performed poorly on the job, they may

reduce their anxiety by reassuring themselves of their general competency, in this instance their competency of judging others.

*Hypothesis 6:* Participants who recommended an applicant and then are assigned that applicant will view one's self as being, in general, better at appraising other people compared to participants who had no input into the hiring process.

Also, since investment can lead to strong cognitive biases, it could be possible that investment in the organization may strengthen these effects. Even though a simulation cannot adequately capture one's investment in the company one is hiring for in the simulation, it could be possible that one's investment in a company can transfer to this simulation (Chiou & Wan, 2007). Type A behavior has also been shown to have stronger biases and Type A behavior might be more prevalent in employees in the upper levels of the organization so this might also demonstrate stronger cognitive biases (Schaubroeck & Williams, 1993). Since research has shown rationality to correlate with stronger cognitive biases, people with more education may also have stronger cognitive biases (Wong et al., 2008). It might also be possible that the larger the company the more bias there might be due to larger perceived investment in the decision.

*Hypothesis 7a:* Participants who recommended an applicant and who had been with their company longer will show stronger biases towards the applicant than participants who have not been with their company as long.

*Hypothesis 7b:* Participants who recommended an applicant and who are at higher levels in the company will show stronger biases towards the applicant than participants who are in lower levels in the company.

*Hypothesis 7c:* Participants who recommended an applicant and had more education will show stronger biases than participants who do not have as much education.

*Hypothesis 7d:* Participants who recommended an applicant had were part of a bigger company will show stronger biases than participants who are not in as bigger company.

It may also be possible that the more perceived criticality the organization has towards error, the more escalation of commitment due to not wanting to be perceived as wrong. These increased errors could result from the participant being used to this stressful environment (Friedman, 2004).

*Hypothesis 8:* Participants who perceived the organization they are in as being more critical to errors will have more escalation of commitment than participants who perceived the organizations they are in as being more lenient towards errors.

Finally, I put in a one item measure of self-esteem to see if I could find if self-esteem correlated with any of the biases. Studies have found conflicting results on the relationship between self-esteem and biases (Martinie & Fointiat, 2006; Steele et al., 1993).

*Hypothesis 9:* The self-esteem of participants will be related to the strength of the biases they show in the simulation.

## CHAPTER 2

### METHOD

The purpose of this experimental study was to examine the interaction and individual effects between self-serving bias, escalating commitment, and cognitive dissonance. Most of the studies I found investigated these cognitive errors in isolation, but by studying all of these errors in the same simulation, one can look at how they relate to each other in order to determine if there is an underlying cause to these three effects (such as ego defense). By using a hiring simulation to study the biases, I can demonstrate that these biases can be present in a business setting even among educated and experienced employees. I can also show how these errors span across situations and people.

#### **Participants**

The surveys were collected by mass emailing various credit unions, new members of Society for Industrial/Organizational Psychologists (SIOP), human resource contact information from online, calling various local businesses, and by emailing faculty at a Midwestern University. Because of the mass email and how only some replied back saying they will take it or pass it along, it is hard to analyze specific demographics, such as industry and occupation, for many of the participants. Overall, 198 people took the survey. Twenty-eight were discarded because the survey was not completed and two were not included in analyses because they chose applicant C. There was also an incentive to enter for a drawing for a \$50 Wal-Mart gift card for completing the survey.

Participants had a mean age of 40.99,  $SD = 13.12$ . There were 62 women and 105 men. Almost half of participants had a PhD (47%) showing that many of the participants were professors. Since some of the email addresses were from SIOP, it can also be

assumed that many were probably industrial-organizational psychology professors too. Thirty-one percent of participants had a master's degree. A large majority of participants were from the United States (95%) and most were full-time employees (87%). Most were non-management (53%) and 40% were either lower or middle management. The participants have been with their company an average of 8.02 years ( $SD = 8.67$ ). The mean age was 40.99 ( $SD = 13.12$ ) and the mean size of the company of the participant was 10,954.09 ( $SD = 48,104.70$ ).

The three groups were the control group (where the participant did not have a choice to offer their opinion on who to hire), which had 55 participants; Experimental Group A (where the participant suggested applicant A and applicant A was hired) which had 65 participants; and Experimental Group B (where the participants suggested applicant B and applicant A was hired) which had 50 participants.

### **Informed Consent**

The participants were not notified that the simulation was going to investigate cognitive biases due to investment and ego defense in order to not have the participants be influenced by this knowledge. Instead, I stated that the studies purpose was on cognitive decisions in performance appraisals and not on cognitive biases. I obtained IRB approval before collecting any data (Appendix A). Before the experiment began, participants read an informed consent and agreed to consent before they were allowed to answer any questions (Appendix B).

### **Independent Variable Manipulation**

The first step in the experiment involved participants viewing three different resumes from three job applicants (Applicant A, Applicant B, and Applicant C) which

appears in Appendix C. One of the applicants was clearly not qualified (Applicant C), while the other two were equally qualified (Applicant A and Applicant B). The resumes were made up by me. The two applicants who were supposed to be equally good (A and B) were pilot tested a several times to ensure that those two applicants would be nearly equal in likability. The end result was making them virtually identical. Sixty-four of the participants were assigned an employee after viewing the applicants (A, B, and C) without any input into the hiring process. Participants were assigned to the different conditions by using their date of birth. The survey asked all participants their day of birth and participants with a day between the 21<sup>th</sup> and 31<sup>th</sup> were put in the control. This resulted in approximately 34.8% of the participants being in the control group. They were considered the control group as this group had no investment in this process due to lack of input. The other 65.3% of participants had an input into the hiring process and answered a question regarding who they recommend the company should hire. Since there are two approximately equally qualified applicants, about half (55.83%) of the participants chose Applicant A (Group A) and about half (44.17%) chose Applicant B (Group B). All three groups were assigned applicant A.

At this point, there were three groups. The control group was given no chance for input into the hiring process (Group C). One group was assigned the employee of their choice (Group A). One group was not assigned their recommended employee (Group B).

### **Measurement of the Dependent Variables**

**Initial confidence in Employee A.** The second step supposedly measured the participants' amount of cognitive dissonance by asking the participants to rate their initial confidence in Applicant A, who was then called Employee A (Appendix D). The

participants were simply asked to rate their confidence in Employee A's ability to perform the job well on a five-point Likert scale from "no confidence at all" (1) to "extremely confident" (5). Because all participants were assigned the same employee, in the absence of any biases all groups would rate their confidence in the new employee as approximately the same. However, because Group A was assigned the employee they recommended, cognitive dissonance should have led them to rate the employee higher than others who did not have that investment (the control group) because the act of making the decision will increase one's positive feelings towards it. Group B, those who chose to recommend Applicant B but were assigned Applicant A, might demonstrate less initial confidence than either Group A or the control group.

Due to past cognitive dissonance research using a question of how much you like a decision after having made the decision to measure cognitive dissonance, the survey asked for the participant's initial confidence in Employee A. When looking at the differences in the initial confidence in the employee, it is theorized to measure cognitive dissonance because of the different investments the participants have in the employee (Schoorman, 1988).

**Performance appraisal ratings.** After the initial rating of confidence, participants read and evaluated performance appraisals. The participants looked at five different descriptions of Employee A who exhibited increasingly negative behavior (Appendices E-I). After reading each behavioral description, the participants rated Employee A's performance on a seven-point Likert scale from 1 (unacceptable) to 7 (excellent) and then the participants chose an action they wished to take for Employee A. There were seven actions which ranged from promotion and monetary reward (best

option), monetary reward (moderately positive action), verbal praise (slightly positive action), wait (neutral action), verbal reprimand (slightly negative action), written warning (moderately negative action), to firing (most negative action). By looking at the differences between the groups' ratings and recommended actions at each of the five steps, one can look at escalation of commitment. If positive escalation of commitment existed, Group A (who were hypothesized to be the most invested in the employee) would have been more lenient towards the employee than Groups B and C. If there was negative escalation of commitment, Group B would have been stricter towards the employee than Groups A and C.

I developed the five behavioral descriptions using examples from the Indiana State Personnel Department Behaviorally Anchored Ranking Scale (Performance Management). I tested the situations to see if people viewed them as becoming increasingly worse. Eleven industrial/organizational graduate students offered to rate the appraisals. I used SPSS to run a reliability test using a Kendall's coefficient of concordance. I found that the different students ratings agreed with each other significantly,  $W = 0.83, p < .001$ .

**Rating confidence.** The third step involved asking the participants two questions. In the first question, I asked them how well they think they did in comparison with others in the study. In the second question, I asked them to rate their ability to read people in general (Appendix J). Both questions used a seven-point Likert scale from 1 (very below average) to 7 (very above average). By asking questions about the participants' confidence in their ability to rate other people's performance and read other people, I thought that Group A might rate themselves as doing better than the control group or

Group B because of their initial investment in Employee A, as well as the threats to their decision, as Employee A's performance suffered, due to ego-defense. These two questions were supposed to measure self-serving bias by asking how the participants viewed themselves on the simulation and in general.

**Demographics.** The fourth step of data collection asked the participants various questions regarding demographics, such as gender, age, nationality, employment status, organizational size, organizational level, organizational tenure, and level of education (Appendix K). Included in the demographics section was a question that asked participants whether the company they work for is very critical towards employees who make errors. Also, there was a question about overall confidence in one's abilities. These two questions used a seven-point Likert scale that ranged from 1 (strongly disagree) to 7 (strongly agree). By looking at the differences among the experimental groups on these variables, I hoped to uncover some potential moderators that may increase or decrease biases.

**Interest in results.** Finally, the participants received a debriefing and a thank you statement. If participants were interested in the results of the study, they had the option to enter in their email for the results (Appendix L). These emails were also used for the drawing. However, these data were not used for analysis.

## **CHAPTER 3**

### **RESULTS**

An experiment method/survey was used to show the prevalence and interaction effects of various biases that might come into play in hiring decisions. The study's variables are cognitive dissonance, escalating commitment, self-serving bias, level of occupation, education level, size of organization, perceived harshness of organization towards errors, and self-esteem. Two participants were omitted from analyses due to them recommending applicant C.

#### **Hypothesis 1**

In my first hypothesis, it was stated that participants who recommended and then were assigned that applicant would have more initial confidence in that employee than participants who had no initial input into the hiring decision and then are assigned that same applicant. This hypothesis was tested by an independent samples t-test. There was no significant difference between participants who had no initial input ( $M = 3.59$ ,  $SD = .53$ ) and participants who recommended an employee and then were assigned that employee ( $M = 3.46$ ,  $SD = .61$ ),  $t(123) = 1.98$ ,  $p = .16$ . In fact, the results were in the opposite direction of what was stated.

#### **Hypothesis 2**

In my second hypothesis, it was stated that participants who recommended an applicant but then are assigned a different applicant would have less initial confidence in that employee than participants who had no initial input into the hiring decision and then are assigned that applicant. This hypothesis was tested by an independent samples t-test. There was no significant difference between participants who had no initial input ( $M = 3.59$ ,  $SD = .53$ ) and participants who recommended an employee and then were not

assigned that employee ( $M = 3.72, SD = .63$ ),  $t(109) = -1.18, p = .24$ . In fact, the results were in the opposite direction of what was stated.

### **Hypothesis 3**

In my third hypothesis, I predicted that participants who recommended an applicant and then are assigned that applicant would be more lenient towards that employee during performance appraisals than participants who had no initial input into the hiring decision and then are assigned that same applicant. This hypothesis was tested by using an independent samples t-test for each of the five performance appraisal ratings and for each of the five performance appraisal actions. There was a significant difference for applicant A's overall performance for the first performance appraisal rating in the direction predicted. The participants who recommended applicant A and then were assigned applicant A ( $M = 6.78, SD = .41$ ) gave applicant A a significantly better rating than participants who had no initial input ( $M = 6.58, SD = .53$ ),  $t(100.96) = -2.29, p < .05$ . However, the fourth and fifth performance appraisal actions were significantly different in the opposite direction than predicted. The participants who recommended applicant A and then were assigned applicant A ( $M = 2.08, SD = .97$ ) were significantly more severe in the fourth performance appraisal action for applicant A than participants who had no initial input ( $M = 2.57, SD = .77$ ),  $t(115.93) = 3.04, p < .01$ . The participants who recommended applicant A and then were assigned applicant A ( $M = 1.20, SD = .51$ ) were significantly more severe in the fifth performance appraisal action for applicant A than participants who had no initial input ( $M = 1.61, SD = .60$ ),  $t(117) = 4.07, p < .001$ . The rest of the performance appraisal ratings and actions recommended were not significantly different between these two groups and can be seen in Table 1.

Table 1

*Performance Appraisal Ratings and Actions Descriptive Statistics for Group that Had No Input and Group that Recommended Applicant A*

		Applicant		
Choice		N	M	SD
PA 1	No Input	55	6.58*	.534
Rating	Applicant A	65	6.78*	.414
PA 1	No Input	54	5.74	.805
Action	Applicant A	65	5.77	.786
PA 2	No Input	54	5.91	.708
Rating	Applicant A	62	5.87	.640
PA 2	No Input	54	5.30	.792
Action	Applicant A	63	5.11	.650
PA 3	No Input	54	3.11	.965
Rating	Applicant A	65	2.94	1.014
PA 3	No Input	55	3.35	.726
Action	Applicant A	65	3.23	.932

Table 1 continued

		Applicant		
Choice		N	M	SD
PA 4	No Input	52	1.83	.857
Rating	Applicant A	65	1.54	.937
PA 4	No Input	53	2.57**	.772
Action	Applicant A	65	2.08**	.973
PA 5	No Input	53	1.13	.394
Rating	Applicant A	65	1.05	.211
PA 5	No Input	54	1.61**	.596
Action	Applicant A	65	1.20**	.506

Note. \* $p < .05$  \*\* $p < .01$ , PA = Performance appraisal

#### **Hypothesis 4**

In my fourth hypothesis, I predicted that participants who recommended an applicant and then are assigned another applicant would be more severe towards that employee during performance appraisals than participants who had no initial input into the hiring decision and then are assigned that applicant. This hypothesis was tested by using an independent samples t-test for each of the five performance appraisal ratings and five performance appraisal actions. The only significance found between applicants who did not have initial input and applicants who were assigned the applicant they did not recommend, were for the actions chosen for the fifth performance appraisal, which went in the predicted direction. The participants who recommended applicant B and then were assigned applicant A ( $M = 1.32, SD = .59$ ) were significantly more severe in their recommended actions for applicant A in the fifth performance appraisal than participants who had no initial input ( $M = 1.61, SD = .60$ ),  $t(102) = 2.51, p < .05$ . The rest of the performance appraisal ratings and actions recommended were not significantly different between these two groups and the results can be seen in Table 2.

#### **Hypothesis 5**

In my fifth hypothesis, I predicted that participants who recommended an applicant and then are assigned that applicant would view one's self as doing better on the simulation compared to participants who had no input into the hiring process. This hypothesis was tested by an independent samples t-test. There was no significant difference between participants who had no initial input ( $M = 4.37, SD = .85$ ) and participants who recommended an employee and then were assigned that employee ( $M = 4.68, SD = .99$ ),  $t(116.79) = -1.82, p = .07$ .

Table 2

*Performance Appraisal Ratings and Actions Descriptive Statistics for Group that Had No Input and Group that Recommended Applicant B*

		Applicant		
Choice		N	M	SD
PA 1 Rating	No Input	55	6.58*	.534
	Applicant B	50	6.68	.471
PA 1 Action	No Input	54	5.74	.805
	Applicant B	50	5.86	.670
PA 2 Rating	No Input	54	5.91	.708
	Applicant B	48	5.85	.772
PA 2 Action	No Input	54	5.30	.792
	Applicant B	50	5.28	.730
PA 3 Rating	No Input	54	3.11	.965
	Applicant B	48	3.02	1.000
PA 3 Action	No Input	55	3.35	.726
	Applicant B	50	3.30	.839

Table 2 continued

		Applicant		
Choice		N	M	SD
PA 4	No Input	52	1.83	.857
Rating	Applicant B	49	1.57	.816
PA 4	No Input	53	2.57**	.772
Action	Applicant B	50	2.30	.763
PA 5	No Input	53	1.13	.394
Rating	Applicant B	49	1.06	.317
PA 5	No Input	54	1.61**	.596
Action	Applicant B	50	1.32*	.587

Note. \* $p < .05$  \*\* $p < .01$ , PA = Performance appraisal

**Hypothesis 6**

In my sixth hypothesis, I predicted that participants who recommended an applicant and then are assigned that applicant would view one's self as being, in general, better at appraising other people compared to participants who had no input into the hiring process. This hypothesis was tested by an independent samples t-test. There was no significant difference between participants who had no initial input ( $M = 5.07$ ,  $SD = .89$ ) and participants who recommended an employee and then were assigned that employee ( $M = 4.92$ ,  $SD = 1.15$ ),  $t(116.40) = .81$ ,  $p = .42$ .

**Hypothesis 7a**

In my seventh hypothesis (part a), I predicted that participants who recommended an applicant and who had been with their company longer would show stronger biases towards the applicant than participants who have not been with their company as long. This hypothesis was tested by using a Pearson's correlation looking at each group separately (control group, recommended applicant a, and recommended applicant b) and combined. For all the groups combined, the recommended action for applicant A for the second performance appraisal was positively correlated with tenure,  $r(150) = .19$ ,  $p < .05$ . The rating for applicant A for the fifth performance appraisal was positively correlated with tenure,  $r(150) = .22$ ,  $p < .01$ . The rest of the performance appraisal related questions or the initial confidence in applicant A question for all the groups combined were not significant and can be seen in Table 3.

For the control group, the recommended action for applicant A for the third performance appraisal was positively correlated with tenure,  $r(45) = .32$ ,  $p < .05$ . The rest

Table 3

*Performance Appraisal Ratings and Actions and Initial Confidence in Employee A**Correlations for All Participants Demographics*

	Size of Company	Level of Employment	Error Criticism	Level of Education	Confidence	Tenure
Confidence	-0.19*	-0.08	.05	-0.18*	.09	-0.15
PA 1 Rating	-0.18*	-0.14	-0.14	-0.03	-0.02	.04
PA 1 Action	-0.14	-0.20*	.11	-0.08	-0.03	.03
PA 2 Rating	.00	-0.09	.05	-0.25**	.02	.04
PA 2 Action	-0.05	-0.06	.10	-0.16*	.13	.19*
PA 3 Rating	.03	.06	.10	-0.10	.07	.08
PA 3 Action	.09	.06	.06	-0.23**	.01	.03
PA 4 Rating	.14	.14	.14	-0.23**	.06	.10
PA 4 Action	.13	-0.02	-0.06	-0.28**	-0.08	-0.01
PA 5 Rating	-0.04	-0.17*	.09	.02	-0.03	.22**
PA 5 Action	.07	.01	-0.11	-0.14	-0.09	.09

Note. \* $p < .05$  \*\* $p < .01$ , PA = Performance appraisal

of the performance appraisal related questions or the initial confidence in applicant A question for all the control group were not significant and are in Table 4.

For the group that recommended applicant A, the rating for applicant A for the fourth performance appraisal was negatively correlated with tenure,  $r(56) = -0.26, p < .05$ . The performance appraisal action for applicant A for the fourth performance appraisal was negatively correlated with tenure,  $r(56) = -0.35, p < .01$ . The rest of the performance appraisal related questions or the initial confidence in applicant A question for all the control group were not significant and can be seen in Table 5.

For the group that recommended applicant B, the rating for applicant A for the third performance appraisal was positively correlated with tenure,  $r(45) = .42, p < .01$ . The recommended action for applicant A for the third performance appraisal was positively correlated with tenure,  $r(47) = .32, p < .05$ . The rating for applicant A for the fourth performance appraisal was positively correlated with tenure,  $r(46) = .52, p < .001$ . The recommended action for applicant A for the fourth performance appraisal was positively correlated with tenure,  $r(47) = .49, p < .001$ .

The rating for applicant A for the fifth performance appraisal was positively correlated with tenure,  $r(46) = .43, p < .01$ . The recommended action for applicant A for the fifth performance appraisal was positively correlated with tenure,  $r(47) = .42, p < .01$ . The rest of the performance appraisal related questions or the initial confidence in applicant A question for all the groups combined were not significant and can be seen in Table 6.

Table 4

*Performance Appraisal Ratings and Actions and Initial Confidence in Employee A**Correlations for the Control Group*

	Size of Company	Level of Employment	Error Criticism	Level of Education	Confidence	Tenure
Confidence	-0.14	-0.22	-0.21	-0.05	.04	-0.25
PA 1 Rating	-0.16	-0.14	-0.14	-0.08	-0.09	-0.14
PA 1 Action	.09	-0.42**	.01	.04	-0.05	-0.01
PA 2 Rating	-0.16	-0.21	.28	-0.22	.09	.13
PA 2 Action	.04	-0.06	.43**	-0.02	.18	.32*
PA 3 Rating	-0.16	.15	.19	-0.12	.12	.07
PA 3 Action	-0.20	.31*	.17	-0.26	-0.03	.13
PA 4 Rating	.04	.32*	.32*	-0.08	.08	.20
PA 4 Action	-0.14	.13	.07	-0.19	-0.13	.02
PA 5 Rating	.06	.42**	.29*	.19	-0.03	.20
PA 5 Action	-0.11	.23	-0.01	.03	.12	.01

*Note.* \* $p < .05$  \*\* $p < .01$ , PA = Performance appraisal

Table 5

*Performance Appraisal Ratings and Actions and Initial Confidence in Employee A**Correlations for the Participants who chose Applicant A*

	Size of Company	Level of Employment	Error Criticism	Level of Education	Confidence	Tenure
Confidence	-0.35**	-0.07	.23	-0.23	.02	-0.06
PA 1 Rating	-0.45**	-0.23	-0.20	-0.11	-0.12	.16
PA 1 Action	-0.19	-0.27*	.15	-0.07	.07	.08
PA 2 Rating	.05	-0.23	-0.03	-0.27*	-0.10	-0.12
PA 2 Action	-0.03	-0.25	-0.01	-0.36*	.04	.00
PA 3 Rating	.17	-0.08	.23	-0.06	.01	-0.17
PA 3 Action	.15	-0.23	.09	-0.30*	-0.06	-0.23
PA 4 Rating	.42**	-0.08	.22	-0.35**	.05	-0.26*
PA 4 Action	.33*	-0.19	.01	-0.45**	-0.13	-0.35*
PA 5 Rating		-0.11	.11	-0.20	-0.12	-0.07
PA 5 Action	.22	-0.17	-0.13	-0.28*	-0.28*	-0.20

Note. \* $p < .05$  \*\* $p < .01$ , PA = Performance appraisal

Table 6

*Performance Appraisal Ratings and Actions and Initial Confidence in Employee A**Correlations for the Participants who chose Applicant B*

	Size of Company	Level of Employment	Error Criticism	Level of Education	Confidence	Tenure
Confidence	.11	-0.00	.08	-0.30*	.24	-0.18
PA 1 Rating	.02	-0.14	-0.21	.08	.17	.24
PA 1 Action	-0.21	.07	.11	-0.29*	-0.13	.02
PA 2 Rating	-0.07	.12	-0.03	-0.25	.08	.12
PA 2 Action	-0.12	.11	-0.03	-0.11	.20	.23
PA 3 Rating	-0.09	.18	-0.09	-0.11	.10	.42**
PA 3 Action	.13	.28*	-0.02	-0.12	.14	.32**
PA 4 Rating	-0.03	.35*	-0.06	-0.17	.07	.52**
PA 4 Action	.03	.18	-0.17	-0.09	.06	.49**
PA 5 Rating	-0.08	.14	-0.03	.02	.07	.43**
PA 5 Action	.15	.08	-0.07	-0.13	-0.10	.42**

Note. \* $p < .05$  \*\* $p < .01$ , PA = Performance appraisal

### **Hypothesis 7b**

In my seventh hypothesis (part b), I predicted that participants who recommended an applicant and who are at higher levels in the company would show stronger biases towards the applicant than participants who are in lower levels in the company. This hypothesis was tested by using a Pearson's correlation looking at each group separately and combined. For all the groups combined, the recommended action for applicant A for the first performance appraisal was negatively correlated with level of employment,  $r(153) = -0.20, p < .05$ . The rating for applicant A for the fifth performance appraisal was positively correlated with level of employment,  $r(151) = .17, p < .05$ . The rest of the performance appraisal related questions or the initial confidence in applicant A question for all the groups combined were not significant and can be seen in Table 3.

For the control group, the recommended action for applicant A for the first performance appraisal was negatively correlated with level of employment,  $r(46) = -0.42, p < .01$ . The recommended action for applicant A for the third performance appraisal was positively correlated with level of employment,  $r(46) = .31, p < .05$ . The rating for applicant A for the fourth performance appraisal was positively correlated with level of employment,  $r(44) = .32, p < .05$ . The recommended action for applicant A for the fifth performance appraisal was positively correlated with level of employment,  $r(45) = .42, p < .01$ . The rest of the performance appraisal related questions or the initial confidence in applicant A question for the control group were not significant and can be seen in Table 4.

For the group that recommended applicant A, the recommended action for applicant A for the first performance appraisal was negatively correlated with level of

employment,  $r(55) = -0.27, p < .05$ . The rest of the performance appraisal related questions or the initial confidence in applicant A question for the group that recommended applicant A were not significant and can be seen in Table 5.

For the group that recommended applicant B, the recommended action for applicant A for the third performance appraisal was positively correlated with level of employment,  $r(48) = .28, p < .05$ . The rating for applicant A for the fourth performance appraisal was positively correlated with level of employment,  $r(47) = .35, p < .05$ . The rest of the performance appraisal related questions or the initial confidence in applicant A question for the group that recommended applicant B were not significant and can be seen in Table 6.

### **Hypothesis 7c**

In my seventh hypothesis (part c), I predicated that participants who recommended an applicant had more education would show stronger biases than participants who do not have as much education. This hypothesis was tested by using a Pearson's correlation looking at each group separately and combined. For all the groups combined, the rating for applicant A for the second performance appraisal was negatively correlated with level of education,  $r(159) = -0.25, p < .01$ . The recommended action for applicant A for the second performance appraisal was also negatively correlated with level of education,  $r(162) = -0.16, p < .05$ .

The rating for applicant A for the fourth performance appraisal was negatively correlated with level of education,  $r(162) = -0.23, p < .01$ . The recommended action for applicant A for the fourth performance appraisal was negatively correlated with level of education,  $r(164) = -0.28, p < .01$ . The initial confidence in Applicant A was also

negatively correlated with level of education,  $r(165) = -0.18, p < .05$ . The rest of the performance appraisal related questions for all the groups combined were not significant and can be seen in Table 3.

For the control group only there were no significant correlations between level of education and the performance appraisal related questions. These results can be seen in Table 4.

For the group that recommended applicant A, the rating for applicant A for the second performance appraisal was negatively correlated with level of education,  $r(59) = -0.27, p < .05$ . The recommended action for applicant A for the second performance appraisal was negatively correlated with level of education,  $r(60) = -0.36, p < .01$ . The recommended action for applicant A for the third performance appraisal was negatively correlated with level of education,  $r(62) = -0.30, p < .05$ . The rating for applicant A for the fourth performance appraisal was negatively correlated with level of education,  $r(62) = -0.35, p < .01$ . The recommended action for applicant A for the fourth performance appraisal was negatively correlated with level of education,  $r(62) = -0.45, p < .01$ . The recommended action for applicant A for the fifth performance appraisal was negatively correlated with level of education,  $r(62) = -0.28, p < .05$ . The rest of the performance appraisal related questions or the initial confidence in applicant A question for all the group that recommended applicant A were not significant and can be seen in Table 5.

For the group that recommended applicant B, the recommended action for applicant A for the first performance appraisal was negatively correlated with level of education,  $r(48) = -0.29, p < .05$ . The initial confidence in Applicant A was also negatively correlated with level of education,  $r(48) = -0.30, p < .05$ . The rest of the

performance appraisal related questions for all the group that recommended applicant B were not significant and can be seen in Table 6.

### **Hypothesis 7d**

In my seventh hypothesis (part d), I predicted that participants who recommended an applicant that were part of a bigger company would show stronger biases than participants who are not in as big a company. This hypothesis was tested by using a Pearson's correlation looking at each group separately and combined. For all the groups combined, size of company was negatively correlated with initial confidence in employee A,  $r(142) = -0.19, p < .05$ . Size of company was also negatively correlated with rating employee A in the first performance appraisal,  $r(142) = -0.18, p < .05$ . The rest of the performance appraisal related questions for all the groups combined were not significant and can be seen in Table 3. In addition, none of the performance appraisal related questions for the control group were significant and those can be seen in Table 4.

For the group that recommended applicant A, size of company was negatively correlated with initial confidence in employee A,  $r(52) = -0.35, p < .05$ . Size of company was also negatively correlated with rating employee A in the first performance appraisal,  $r(52) = -0.45, p < .01$ . However, size of company was positively correlated with rating employee A in the fourth performance appraisal,  $r(52) = .42, p < .01$ , and positively correlated with recommended action for employee A in the fourth performance appraisal,  $r(52) = .33, p < .05$ . The rest of the performance appraisal related questions for the group that recommended applicant A were not significant and can be seen in Table 5. None of the performance appraisal related questions or the initial confidence in applicant A

question for the group that recommended applicant B were significant and those can be seen in Table 6.

### **Hypothesis 8**

In my eighth hypothesis, I predicted that participants who perceived the organization they are in as being more critical to errors would have more escalation of commitment than participants who perceived the organizations they are in as being more lenient towards errors. This hypothesis was tested by using a Pearson's correlation looking at each group separately and combined. For all groups combined none of the performance appraisal related questions or the initial confidence in applicant A question were significant. These results can be seen in Table 3.

For the control group, the recommended action for applicant A for the second performance appraisal was positively correlated with level of criticism,  $r(48) = .43, p < .01$ . Level of criticism was also positively correlated with rating employee A in the fourth performance appraisal,  $r(44) = .32, p < .05$ , and the fifth performance appraisal,  $r(45) = .29, p < .05$ . The rest of the results can be seen in Table 4. For the group that recommended applicant A and the group that recommended applicant B none of the performance appraisal related questions were or the initial confidence in applicant A question significant. The results for the group that recommended applicant A are in Table 5. The results for the group that recommended applicant B are in Table 6.

### **Hypothesis 9**

In my ninth hypothesis, I predicted that the self-esteem of participants would be related to the strength of the biases they show in the simulation. This hypothesis was tested by using a Pearson's correlation looking at each group separately and combined.

For all groups combined, none of the performance related questions or the initial confidence question related to participant self-esteem. These results can be seen in Table 3. For the control group and the group that recommended applicant B none of the performance appraisal related questions or the initial confidence in applicant A question were significant. The results for the control group are in Table 4. The results for the group that recommended applicant B is in Table 6. Confidence was negatively correlated with the recommended action for applicant A for the fifth performance appraisal,  $r(62) = -0.28, p < .05$ . The rest of the results for the group that recommended applicant A are in Table 5.

### **Exploratory Analyses**

It was also useful to look at any potential relationships between demographics variables and biases. An ANOVA was performed between the 3 groups (control group, group that recommended applicant A, and group that recommended applicant B) to see if there was any significant difference in demographics between the groups. It was found that there was no significant difference in gender, age, employment status (full-time, part-time, unemployed), level of employment (non-management, lower-management, middle management), perceived organizational criticism towards errors, level of education, and confidence. These results can be seen in Table 7.

Since Hypothesis 1 and 2 were not supported, I ran another independent samples t-test comparing the group that chose applicant A to the group that chose applicant B rather than just comparing both to the control group and found a significant difference. The participants who recommended applicant A ( $M = 3.46, SD = .61$ ) had significantly lower initial confidence in employee A than participants who recommended applicant B

Table 7

*ANOVA between the 3 groups concerning demographic questions, perceived company criticism, and general self-confidence*

		F	Sig.
Gender	Between Groups	.337	.71
Age	Between Groups	.197	.82
Employment Status	Between Groups	1.597	.21
Size of Company	Between Groups	1.092	.34
Level of Employment	Between Groups	.902	.41
Tenure	Between Groups	.431	.65
Error Criticism	Between Groups	1.442	.24
Level of Education	Between Groups	1.339	.27
Confidence	Between Groups	.018	.98

( $M = 3.72$ ,  $SD = .63$ ),  $t(116) = -2.23$ ,  $p < .05$ . There were not significant differences between the two experimental groups concerning the performance appraisal questions.

Since there seemed to be a trend, not between the three groups, but between the control group and the groups that were asked to recommend an applicant (whether they chose A or B), I combined the two groups to make an overall input group to compare to the control group. Using a t-test, it was found that the group that had input into the initial hiring decision were more harsh in the actions recommended for employee A in the fourth performance appraisal ( $M = 2.17$ ,  $SD = .89$ ) than the control group ( $M = 2.57$ ,  $SD = .77$ ),  $t(166) = 2.76$ ,  $p < .01$ . The group that had input into the initial hiring decision were also more harsh in the actions recommended for employee A in the fifth performance appraisal ( $M = 1.25$ ,  $SD = .54$ ) than the control group ( $M = 1.61$ ,  $SD = .60$ ),  $t(95.69) = 3.75$ ,  $p < .001$ . The rating for the first performance appraisal for employee A was not significantly different between the participants who were asked for input ( $M = 6.74$ ,  $SD = .53$ ) and those who weren't ( $M = 6.58$ ,  $SD = .44$ ), but it was kind of close with the participants who were asked for input giving employee A slightly better ratings,  $t(90.46) = -1.90$ ,  $p = .06$ . There were also no significant differences found between the asked for input and not asked for input groups concerning initial confidence in employee A and one's ratings of how well they did on the simulation as compared to others. These results can be seen in Table 8.

I also looked to see how initial confidence in employee A influenced the performance appraisal questions. For all groups, initial confidence in employee A was positively correlated with the rating for performance appraisal one,  $r(170) = .30$ ,  $p < .001$ , and performance appraisal two,  $r(164) = .23$ ,  $p < .01$ . Initial confidence was also

Table 8

*Performance Appraisal Ratings and Actions Descriptive Statistics**Comparing the Control Group to the Groups that had Input*

	Input	N	M	SD
PA 1	Not asked	55	6.58*	.534
Rating	Asked	115	6.74	.441
PA 1	Not asked	54	5.74	.805
Action	Asked	115	5.81	.736
PA 2	Not asked	54	5.91	.708
Rating	Asked	110	5.86	.697
PA 2	Not asked	54	5.30	.792
Action	Asked	113	5.19	.689
PA 3	Not asked	54	3.11	.965
Rating	Asked	113	2.97	1.004
PA 3	Not asked	55	3.35	.726
Action	Asked	115	3.26	.889

Table 8 continued

	Input	N	M	SD
PA 4	Not asked	52	1.83	.857
Rating	Asked	114	1.55	.883
PA 4	Not asked	53	2.57**	.772
Action	Asked	115	2.17**	.891
PA 5	Not asked	53	1.13	.394
Rating	Asked	114	1.05	.261
PA 5	Not asked	54	1.61**	.596
Action	Asked	115	1.25**	.544

Note. \* $p < .05$  \*\* $p < .01$ , PA = Performance appraisal

positively correlated with recommended action for performance appraisal two,  $r(167) = .16, p < .05$ .

I also looked to see how the performance appraisal questions related to each other overall. I found the rating given to employee A in the first performance appraisal was positively correlated with the rating for the second performance appraisal,  $r(164) = .29, p < .001$ . However, the rating for the first performance appraisal was negatively correlated with the ratings for performance appraisals three,  $r(167) = -0.15, p < .05$ , four,  $r(166) = -0.21, p < .01$ , and five,  $r(167) = -0.20, p < .01$ . Rating for first performance appraisal was also negatively correlated with recommended action for performance appraisal four,  $r(168) = -0.16, p < .05$ , and five,  $r(152) = -0.15, p < .05$ . These results are in Table 9.

Since the range of ratings and actions seemed to be more extreme for the experimental groups than for the control group, I calculated the range of performance appraisal ratings and recommended actions and compared the group that was asked for input to the control group. Using an independent samples t-test I found that range of overall performance ratings was not significantly difference between the group that was not asked for input into the hiring decision ( $M = 5.45, SD = .77$ ), and the group asked for input ( $M = 5.68, SD = .52$ ),  $t(74.67) = -1.98, p = .052$ . However, it was nearing significance. There were significant differences between the group that was not asked for input ( $M = 4.15, SD = .1.13$ ) and the group that was asked for input ( $M = 4.56, SD = .97$ ), in regards to range of recommended actions,  $t(88.14) = -2.26, p < .05$ .

Both level of employment,  $r(152) = .19, p < .05$ , and level of education,  $r(163) = .17, p < .05$ , were positively related to one's general confidence in abilities. However, level of employment was also significantly correlated with one's view of one's

Table 9

*Performance Appraisal Ratings and Actions Correlation with**1<sup>st</sup> Performance Appraisal Rating*

	PA 1 Rating
PA 1 Action	.19*
PA 2 Rating	.29**
PA 2 Action	.01
PA 3 Rating	-0.15*
PA 3 Action	-0.13
PA 4 Rating	-0.21**
PA 4 Action	-0.16**
PA 5 Rating	-0.20**
PA 5 Action	-0.13

*Note.* \*  $p < .05$  \*\*  $p < .01$ , PA = Performance appraisal

performance on the simulation compared to others,  $r(152) = .25, p < .01$ , and one's rating of one's general ability of reading people,  $r(153) = .18, p < .05$ . It was also found that older applicants had less initial confidence in applicant A,  $r(162) = -0.21, p < .01$ . General confidence ability was also positively correlated with initial confidence in applicant A,  $r(166) = .16, p < .05$ . These results are in Table 10.

Table 10

*Correlations Between Level of Employment and Level of Education with One's Comparison with other's Performance, General Read Ability, and General Confidence*

	Level of Employment	Level of Education
Performance Comparison	.25**	.05
General Read Ability	.18*	.13
General Confidence	.19*	.17*

*Note.* \* $p < .05$  \*\* $p < .01$ , PA = Performance appraisal

## CHAPTER 4

### DISCUSSION

This study was originally designed to study cognitive dissonance, escalating commitment, and self-serving bias in a hiring decision. However, most of the hypotheses were not supported or even went in the opposite direction as predicted. Both Hypothesis 1 and Hypothesis 2 were not supported. The group that recommended applicant A and the group that recommended applicant B were not significantly different from the control group who had no input into which applicant was hired in their initial confidence in applicant A.

Hypothesis 3 was partially supported. People who recommended applicant A gave employee A an overall higher rating in the first performance appraisal than the control group. However, the recommendations for employee A in the fourth and fifth performance appraisal actions went in the opposite direction predicted. Participants who recommended applicant A, compared to the control group, were more harsh. When comparing the two experimental groups to each other, it was found that they were not significantly different in their appraisals or recommended actions, showing that positive investment in the applicant might not have been the reason for the differences in ratings and recommended actions.

Hypothesis 4 was partially supported. It was found that participants who recommended applicant B recommended more harsh actions towards employee A than the control group but only for the fifth performance appraisal. Again, this may not be due to negative investment in applicant A because there was not a significant difference when the two experimental groups were compared to each other.

One of the reasons for this mixed support might be because having any input into the decision of hiring at all may have more of an impact than simply who was recommended. With both applicant A and applicant B being so similar, perhaps both experimental groups had to exert more effort into evaluating the candidate than the control group who was not asked for input. This additional cognitive input may have led the experimental groups to be more susceptible to both cognitive dissonance and contrast theory. Initially, I believed that cognitive dissonance would have been measured by initial confidence in the hired employee, but cognitive dissonance could also lead to a skewing of information being presented on the choice (Schultze et al., 2012). Since the choice of applicant for both experimental groups may not have mattered (because applicants A and B were so similar), what did matter was that both put more effort into the hiring process than the control group, and this might have motivated them to view either applicant as performing better. For example, when I grouped the two experimental groups together and ran a t-test comparing them to the control group, the two experimental groups rated employee A as doing better on the first performance appraisal rating than the control group as it can be seen in Table 8; however this finding was only marginally significant ( $p = .06$ ). This may have been the actual measure of cognitive dissonance, rather than the initial confidence method, but coming to this conclusion after the data have been analyzed would give this idea very little actual support.

Escalating commitment also states that people may misinterpret information in order to confirm their expectations (Biyalogorsky et al., 2006; Schoorman, 1988). If this was true for this experiment, the experimental groups' enthusiasm for employee A would have been consistently higher than the control group, but that was also not the case. In

fact, towards the end, the experimental groups were significantly harsher than the control group in the recommended actions towards employee A. It might be that instead of a consistently more positive evaluation of the employee, as performance dwindles, people who put effort into the hiring process may become more critical towards the employee. The assimilation-contrast approach posits that when the discrepancy in attitudes and expectations is small, cognitive dissonance is used to minimize that discrepancy. However, when the discrepancy becomes too large to ignore, the opposite effect happens and discrepancies are magnified and appear larger (Anderson, 1973; Anderson & Hair, 1972; Whittaker, 1965). Another study also found a similar curvilinear relationship between confidence in a choice and time as it pertains to product purchases, with confidence being highest at the beginning but then decreasing as time goes on (Monga & Houston, 2006). The reason this effect might appear in the experimental groups rather than the control group is due to the effort put into the hiring process by the experimental groups.

However, there are a few downsides to viewing these results as possibly supporting the assimilation-contrast approach. For one thing, a lot of the assimilation-contrast research has been studied in marketing so the focus of evaluation was on items rather than people (Anderson, 1973; Anderson & Hair, 1972; Monga & Houston, 2006). The research that has been done on how the assimilation-contrast effect impacts one's judgments on other people, looks at the effect when people are evaluating many difference people's one time performances rather than one person's many performances (Damisch & Mussweiler, 2006; Kravitz & Balzer, 1992; Mussweiler, 2003). These looked more at how rating other people's performances affected one's ratings of other

people's performance. For example, if a hiring manager looks at increasingly bad performance appraisals from different employees, would that hiring manager rate the last performance better or worse than if the hiring manager looked at performance appraisals that were increasingly good. Even though this bias has been found in comparing different people it was more difficult to find this effect being studied in different performance appraisals within the same person. That also adds the limitation that in real life, different performance appraisal have a large amount of time in between them that may erase this bias as compared to just having all the performance appraisal in a row as was done in this simulation.

An implication of my findings is that people who are more involved in the hiring process might over-rate employees who are performing well, compared to people who were not involved in the hiring process. On the other hand, people who are more involved in the hiring process might also view employees who perform poorly as doing worse, compared to people who were not involved in the hiring process. It is important to note that at the beginning of my experiment, when the employee was performing well, those involved in the hiring process provided a significantly higher rating, but not a higher recommended action. However, towards the end of my experiment, those involved in the hiring process provided significantly lower recommended actions rather than ratings. This may be because of different types of expectations one might hold for an employee's performance. Kopalle and Lehmann (2001) examined how people might have one set of expectations used for managing satisfaction and another set of expectations used for decisions. Strategic management of expectations means that people actively lower their expectations in order to become more satisfied with the actual results. The experimental

groups may have been more motivated to want to be satisfied in the employee due to their initial input, which could also explain why the experimental groups had significantly higher ratings but did not give significantly different recommended actions. When the employee started performing worse, the expectations used for making decisions overrode the expectations used for being more satisfied with the results, possibly. More research should look into the relationship between these two classes of expectations to see which situations allow which to flourish.

There was no support for hypotheses five or six, showing that participants who recommended an applicant did not judge themselves on doing significantly better on the simulation nor did they think themselves to have higher ability in generally reading people than those who did not have input into the hiring decision. Some interesting demographics did relate to the various self-judgment questions that were asked. Both higher educated participants and participants in management positions rated themselves as more confident in their general abilities. However, only level of employment was positively correlated with one's ratings of one's performance on the simulation compared to others and to one's general ability to read people, meaning that management leveled participants rated themselves as doing better compared to others than non-management. The higher one was in management (lower, middle, then upper management) the stronger the self-rating. Considering that, this simulation was not a valid predictor of performance in actual hiring decisions; it is interesting to see that people in management were more likely to see themselves as doing better on the simulation. However, it might not be accurate to conclude that people in management overestimate their abilities. It could simply show that their real life, actual abilities in hiring decisions (which management

would have more experience with than non-management) may just be generalizing to this simulation.

In Hypotheses 7-9, I examined how various other questions and demographics might relate to the simulation. Specifically, I looked at how tenure, level of employment, level of education, size of company, perceived error criticism of company, and confidence levels of participant related to the performance appraisal questions. Despite finding some significant results, because of the amount of correlations performed, many of the significant findings might have occurred by chance. Therefore, I will only mention the trends that seem to be better supported in the discussion. One interesting trend is that many of the significant differences found in the performance appraisal part were either at the very first performance appraisal or near the end where performance of the employee was decreasing. This might be because having to evaluate the extremes of employee performance leads to more deviation amongst participants' attitudes towards the employee's actions.

Despite some significant findings for Hypothesis 7a, which examined how tenure related to the simulation, I did not see any explicit trends. Overall, it seemed that tenure was positively related to ratings and recommended actions for employee A in the group that recommended employee B, which significance being found in both performance appraisal actions and ratings for performance appraisal three, four, and five. However, tenure was negatively related to ratings and action recommendations for the group that recommended applicant A but significance was only found in the fourth performance appraisal rating and action.

Hypothesis 7b examined the relationship between levels in a company to the simulation. There seemed to be a trend where participants in higher levels in the organization recommended a less positive action for employee A for the first performance appraisal. However, near the end of the experiment, when the employee was doing poorly, level in the company was positively related to recommended action. This showed that higher management positions seemed to want to avoid the extremes in recommending actions for the employee. This might be due to understanding more about the actual processes behind the recommended actions, as someone who is more understanding of the effort it takes to replace someone who either has been promoted or fired would be less willing to choose those extreme options than someone in a non-management position maybe would.

Hypothesis 7c examined the relationship between education and questions in the simulation. Overall, it seemed that those with higher education consistently recommended more harsh actions towards the employee and gave harsher ratings. This might relate to expectations coming because of experience (Cardozo, 1965; Katona, 1946). Having more education might mean being surrounded by very smart and motivated people and participants with higher education might have these qualities as well. When these higher expectations are broken, one is less satisfied with the results (Cardozo, 1965; Spector, 1956; Wanous, Poland, Premack & Davis, 1992).

Hypothesis 7d examined the relationship between size of company and questions in the simulation. The relationships found were similar to the ones found in Hypothesis 7b, with participants in the bigger companies being harsher towards the employee in the beginning and then more lenient when the employee started performing more poorly.

However, the harshness towards the employee in the first performance appraisal was reflected in the rating rather than in the recommended action, while lenience towards the employee when the employee started performing more poorly was reflected in the recommended action.

Hypothesis 8 explored whether level of perceived organizational criticism was related to the simulation. Significant differences only emerged for the control group, where perceived criticism was positively related to recommended action for employee A and positively related to rating for employee A in the fourth and fifth performance appraisals. This could mean that participants who viewed their company as more critical were less critical when it came to rating and recommending actions for others, but again these results were found only for the control group.

Hypothesis 9 explored whether general ability in confidence was related to the questions in the simulation. Only one significant relationship for one group was found, implying that there is probably not a relationship demonstrated in this study.

Some exploratory analyses were calculated to further explore some of the demographics and their relations to the simulation. It was found that older employees had less initial confidence in applicant A. This might be due to more life experience, as expectations are in part due to previous experiences (Cardozo, 1965; Katona, 1946). This might have acted as a mediator in regards to initial confidence in applicant A. Varying demographics being related to initial confidence might also be demonstrating trust rather than expectations. Hypothesis 7d examined whether being part of a larger company leads to stronger biases. Even though I could not look at effect of company size on biases due to lack of biases demonstrated in this study, I did find that size of company was

negatively correlated with initial trust in applicant A. McKnight, Cummings, and Chervany (1998) looked at initial trust formations in organizations. An example of initial trust formation could be that confidence rating in employee A. One type of trust they found that could affect initial trust formation in new organizational relationships is something called institution-based trust. This is trust that emerges out of the company's culture and its own insecurities of itself. The finding that size of company relates to initial confidence might be demonstrating the impact of institution-based trust in hiring decisions with the idea that larger companies might have a less trusting culture overall and that participants might be redirecting in their own organization based experiences.

When looking at how the questions in the simulation were related to each other, some interesting results were found. For one thing, initial confidence in employee led to higher performance appraisal ratings in the first and second performance appraisal and also led to more positive actions being recommended for the employee in performance appraisal two. This shows that despite all participants being given the same information for the first two performance appraisals, previous attitudes towards the employee can bias information to the point that different actions might be taken due simply to the fact of initial confidence in an applicant. This may lead to first impressions biasing someone evaluating an employee. However, once the employee's performance started slipping, initial confidence did not significantly affect those performance appraisal ratings or recommended actions.

It was also found that ratings for performance appraisal one was positively related to the rating for performance two. This makes sense in the aspect that some participants might have leniency errors (Cascio & Aguinis, 2010). However, since the rating for

employee A in the first performance appraisal was negatively related to the ratings for performance appraisals three through five, this might also imply an assimilation-contrast effect. While rating for performance appraisal one was positively related to performance appraisal two (showing cognitive dissonance), once the discrepancy in performance gets too large, then the discrepancies are maximized, leading to lower ratings. The fact that recommended actions were only significantly related in the last two performance appraisals might also show the difference between expectations used for decision-making and expectations used for strategic management (Kopalle & Lehmann, 2001).

### **Practical Implications**

Due to many hypotheses not being supported, there needs to be more research done on the ideas presented before it would be useful to use this information in business. However, there are some important potential findings to take away from this. Involvement in hiring decisions seemed to have participants more involved in the performance appraisal as those participants in the experimental group seemed more receptive to the changes in the employee. However, range of performance for employee A might not represent actual situations. This might be why other studies have found an overall better rating of employees that participants helped hire, rather than finding the assimilation-contrast effect. Due to the range of employee performance being more moderate in other experiments, the discrepancy between expectations and actual performance might not have been large enough to have the evaluator switch from minimizing to magnifying those differences in expectations (Anderson, 1973; Anderson & Hair, 1972; Schoorman, 1988; Whittaker, 1965).

One aspect that might be taken into consideration is the impact of institutional trust on initial confidence in an employee. If a company does demonstrate low trust and employees in that company demonstrate low trust to new relationships within the organization, it could lead to lower expectations for the new employee. Even though lower expectations may be good for being more satisfied with the employee's performance, having low expectations might also create a self-fulfilling prophecy or a Rosenthal effect for that employee and result in lower performance (Cardozo, 1965; Rosenthal & Jacobson, 1996; Spector, 1956; Wanous et al., 1992). Looking at how satisfaction can relate to expectations can also give more insight into the idea of realistic job previews. One study found a slight positive correlation between met expectations in a job and turnover. This article stated that realistic job previews could lead to better-satisfied employees (Wanous et al., 1992).

Overall, despite many hypotheses not being supported, there was support for the malleability of performance appraisals based on less than objective information (such as the impact of first impressions).

### **Limitations**

Again, it is important to note that many of these assumptions were post hoc and, thus, may not be what was actually being demonstrated in the experiment. These findings should also be evaluated in light of the limitations that this study had. This study had some problems with the sample population. Initially, individual companies were to be recruited to send out the survey link to all of their employees. This would allow for a variety of education and employment levels, while holding the organizational culture and industry of which these participants resided in consistent. However, the companies that

were kind enough to send out the survey link to their employees were of modest size. This led to mass emailing in order to get more participations, and this led to a lot of the participants being professors, particularly I/O professors from the SIOP email list, which could affect the generalizability of these findings to businesses that are not universities.

There were also some design problems in the study. In order to have participants recommend the applicants in relatively equal numbers, the two applicants given for the simulated position were extremely similar. This could have resulted in the decreased preference for either applicant chosen, which could have explained the lack of cognitive dissonance found between the two experimental groups. More information on the applicant could have also made a difference, as some participants may not have felt informed enough to be confident in their decision. Having a more detailed performance appraisal would have also helped, as some participants may have been confused about whether the employee they were appraising for each performance appraisal was the same. The survey also had the questions as optional, which may have prevented some participants from entering information they were unsure about (such as size of company) but this also led to unequal cell sizes during the data analyses. However, this difference in sample sizes between the questions in the simulation was minimal, which implies that the questions not answered reflect random error rather than systematic error. A further problem with the same size is the large number of professors, in particular I/O professors, who were participants. Biases may have been as prevalent in these professors due to the likelihood of them being more aware of how biases work in performance appraisal.

Another limitation was the lack of support for the design of the study. I found few studies that looked at cognitive dissonance and escalating commitment on which to base

my design on. I also made up my own instruments, such as the information for the different applicants and the performance appraisal, even though I did base performance appraisal ratings on an established scale (Performance Management). Another limitation is that even though I had control and experimental groups to help determine possible causality, the participants were not randomly assigned for each group. Instead, birthday was selected to determine who would be in the control group, and choice of applicant was used to determine positive and negative escalation of commitment groups. Even though true random assignment was not used for the groups, there did not seem to be any demographic differences between the groups.

### **Future Research**

Much of the research I found that related these ideas and concepts to business applied to marketing. There were fewer articles applying this research to hiring decisions, particularly considering the assimilation-contrast theory. Even though market research on choosing a product might be generalized to the idea of businesses choosing an employee, more research is needed that applies to hiring decisions. In my study, I used resumes to provide information for the participants to rate the applicants. Rather than having a resume, having a script or a video of an interview might make the initial impression of the applicant more personable and stronger. If trust is being explored, this trust might be conceptualized more in something personal as an interview, rather than a brief resume (McKnight et al., 1998).

It might also be interesting to look at the impact of the initial resume and interview in hiring decisions. If an applicant oversells his or her own abilities in a resume and interview, it might get the person hired, but those higher expectations could lead to

lower satisfaction in the employee if the employee cannot live up to those expectations, compared to an employee with the same performance on the job who did not oversell his or her abilities during the selection phase. This might be viewed as using a realistic job applicant preview in order to gain more satisfaction with one's performance from management.

Because this research found some relationship between size of company and initial confidence, it might be enough evidence to warrant more research on how organizational culture affects first impressions and trust within an organization, particularly in hiring new members into the organization (McKnight et al., 1998). A difference in comparing one's ability to others was found in management verses non-management. Since there was not enough information to determine if this effect was due to generalizing one's own ability in hiring to the simulation or just over estimating one's performance in general (self-serving bias), I would recommend research that looks at management verses non-management performance on an objective, measurable task. Then it might be useful to see if management still has a tendency to view itself as doing better on the activity.

I would also encourage future cognitive dissonance and escalating commitment research to broaden the range of results for the decision. If the affirmation-contrast theory is correct, having limited range of output for escalating commitment studies might not have a high enough discrepancy invoked in the participant to turn on the contrast theory (Anderson, 1973). Again, research on this theory seems to focus more on product purchases rather than hiring decisions, so more research trying to find this effect in hiring decisions would also be useful.

Future research might also vary the position of the performance appraisals. In my simulation, the employee was clearly decreasing in performance. However, it would be interesting to look at how ratings and biases would differ if the employee went from incredibly bad to incredibly good. It might also be useful to see how random placement of performance appraisal might affect biases. Future research would also benefit from simulations that are more extensive in order to provide information that is more realistic.

Overall, many of my hypotheses were not supported but even though these aren't the biases we're looking for, there was still evidence of less than objective factors influencing the appraisal of the employee. Even though there may have been problems with the sample size concerning generalizability, considering that even with a large sample of industrial/organizational psychology professor taking the survey, still finding biases occurring in the simulation shows that cognitive biases and errors span across all levels of education as well as all levels of management. This study shows that research should focus on cognitive biases across all levels of education and management instead of assuming that those with enough education and experience are exempt from these studied psychological fallacies.

This study also shows that biases are very complex. Finding not only some evidence for cognitive dissonance with the higher performance ratings at the beginning, but also finding contrast theory with the lower performance ratings and actions at the end, it shows that attitudes can fluctuate rather than consistently positively or negatively impact one's interpretation of a situation. There are also additional questions regarding how sometimes the ratings might have shown significance differences while the actions did not and vice versa. I have already proposed this might have come about due to

different types of expectations. These differences could have also been due to other things such as one's experience with frequency of being promoted or fired. It might also depend on the participants view that other factors should have been considered for things like promotion (such as seniority) while others might not find those factors important.

The complexity of cognitive biases in the real world calls for a need for more experimentation looking at multiple cognitive biases rather than looking at these biases in isolation. There is also still a lack of research applying psychological aspects to human resource related practices, rather than just marketing. I hope that more research will bring science a better understanding of these biases so we will be more able at recognizing them in ourselves, not only for business practices, but for overall life choices as well.

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Appendix A  
IRB Approval



January 9, 2013

Breanna Morrison  
Psychology Department  
Campus Box 4031  
Emporia State University  
Emporia, KS 66801

Dear Ms. Morrison:

Your application for approval to use human subjects has been reviewed. I am pleased to inform you that your application was approved and you may begin your research as outlined in your application materials. Please reference the protocol number below when corresponding about this research study.

Title:	The Effects of Cognitive Biases on Hiring and Firing Decisions
Protocol ID Number:	13048
Type of Review:	Expedited
Time Period:	10/20/2012 - 10/20/2013

If it is necessary to conduct research with subjects past this expiration date, it will be necessary to submit a request for a time extension. If the time period is longer than one year, you must submit an annual update. If there are any modifications to the original approved protocol, such as changes in survey instruments, changes in procedures, or changes to possible risks to subjects, you must submit a request for approval for modifications. The above requests should be submitted on the form Request for Time Extension, Annual Update, or Modification to Research Protocol. This form is available at [www.emporia.edu/research/irb.html](http://www.emporia.edu/research/irb.html).

Requests for extensions should be submitted at least 30 days before the expiration date. Annual updates should be submitted within 30 days after each 12-month period. Modifications should be submitted as soon as it becomes evident that changes have occurred or will need to be made.

On behalf of the Institutional Review Board, I wish you success with your research project. If I can help you in any way, do not hesitate to contact me.

Sincerely,  
*Michael Butler*

Michael Butler  
Chair, Institutional Review Board

pf  
cc: Dr. George Yancey

Appendix B  
Informed Consent

## Informed Consent

**Study Name:** The Effects of Cognitive Bias on Hiring and Firing Decisions

**Faculty Researcher(s):** Dr. George Yancey

**Student Researcher(s):** Breanna Morrison

**Telephone Number(s):** (620) 341-5839; (620) 341-5802

**E-mail(s):** gyancey@emporia.edu, bmorriso@g.emporia.edu

The Department of Psychology supports the practice of protection for people participating in research and related activities. This study has been reviewed to determine that it poses little or no risk of harm to you. Any information obtained from you will be kept strictly confidential. Although you may be assigned an arbitrary participant number to assist in data collection, we assure you that neither your name nor participant number will be associated in any way with any reportable results. The following information is provided so that you can decide whether you wish to participate in the present study.

The purpose of this study is to measure your performance on a managerial simulation. Your participation should take approximately 30 minutes. **You should be aware that even if you agree to participate, you are free to withdraw at any time, and that if you do withdraw from the study, you may do so without penalty.**

The researchers are obligated to tell you as much as you care to know about the study after your part in the study is complete. If you would like an electronics copy of the results, you will have an opportunity to provide an email address at the end of the study.

All persons who take part in this study must sign this consent form. You must be over 18 years of age. Your signature in the space provided indicates that you have been informed of your rights as a participant, you are 18 years of age or over, and you have agreed to volunteer on that basis.

*"I have read the above statement and have been fully advised of the procedures to be used in this project. I have been given sufficient opportunity to ask any questions I had concerning the procedures and possible risks involved. I understand the potential risks involved and I assume them voluntarily. I likewise understand that I can withdraw from the study at any time without being subjected to reproach."*

Signature of Participant: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix C

### Hiring Simulation: Applicant Selection

*All participants viewed these Applicants but those who answered their day of birth to be between 21<sup>st</sup> -31<sup>th</sup> did not get the option of recommending the employee.*

You are a manager who has been asked to look over these applicants. These three applicants are applying for a sales job at your company's electronic store in an urban city. The job involves communicating information to customers, working with people, helping deliver products to customers who ordered an installation of their products, and being knowledgeable about current technology and being able to learn about new technology.

### **Applicant A**

Education:

- Community College degree in Technical Education: GPA 3.65

Experience:

- Was a sales person for 2 years
- Worked as an assistant at a computer repair shop for 1 year

Other notes:

- References say Applicant A is very good with people

### **Applicant B**

Education:

- Two year degree in Technical Education: GPA 3.65

Experience:

- Was an assistant for computer repair store for 1 year
- Worked in a sales position for 2 years

Other notes:

- References say Applicant B works very well with people

### **Applicant C**

Education:

- High School GPA: 2.86

Experience:

- Was a bookkeeper at a local pharmacy for 1 year
- Worked at a pizza delivery service for 2 years

Other notes:

- Reference said he received a DUI (driving under the influence) while on the job as a pizza delivery person.

Your supervisor asks you to recommend one of these three applicants.  
Which applicant would you recommend?

Applicant A	
Applicant B	
Applicant C	

*[This was not be there for control group]*

Appendix D  
Initial Confidence Scale

Applicant A was chosen for the position. They are now known as Employee A.  
Rate your confidence in Employee A's ability to perform the job well.

1	2	3	4	5
No confidence at all	Very little confidence	Somewhat confidence	Very confident	Extremely confident

Appendix E  
Performance Appraisal One

You are asked to review Employee A's performance and give recommendations.

Here are some behaviors and traits Employee A demonstrates:

- The employee actively creates and maintains a friendly and conflict free work environment
- Is excellent with customers and often goes above and beyond to stratify their needs
- Has exceptional job knowledge and is often sought out for advice

Rate Applicant's A overall performance.

1	2	3	4	5	6	7
Unacceptable	Marginal	Somewhat bad	Neutral	Somewhat good	Good	Excellent

You are asked to give recommendations on what if any action should be taken with Employee A.

Fire	Written warning	Verbal warning	Wait	Verbal praise	Monetary raise	Promotion and raise
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Appendix F

Performance Appraisal Two

You are asked to review Employee A's performance and give recommendations.

Here are some behaviors and traits Employee A demonstrates:

- Is considerate when dealing with coworkers
- Gives acceptable service to customers and responds in a timely fashion
- Has thorough knowledge of one's own job and duties

Rate Applicant's A overall performance.

1	2	3	4	5	6	7
Unacceptable	Marginal	Somewhat bad	Neutral	Somewhat good	Good	Excellent

You are asked to give recommendations on what if any action should be taken with Employee A.

Fire	Written warning	Verbal warning	Wait	Verbal praise	Monetary raise	Promotion and raise
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Appendix G  
Performance Appraisal Three

You are asked to review Employee A's performance and give recommendations.

Here are some behaviors and traits Employee A demonstrates:

- Sometimes shows respect for other co-workers
- Provides slightly less than satisfactory care to customers
- Has decent knowledge but trouble keeping up with technological trends

Rate Applicant's A overall performance.

1	2	3	4	5	6	7
Unacceptable	Marginal	Somewhat bad	Neutral	Somewhat good	Good	Excellent

You are asked to give recommendations on what if any action should be taken with Employee A.

Fire	Written warning	Verbal warning	Wait	Verbal praise	Monetary raise	Promotion and raise
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Appendix H  
Performance Appraisal Four

You are asked to review Employee A's performance and give recommendations.

Here are some behaviors and traits Employee A demonstrates:

- Often distracts and disturb other employees while they are working
- Is slow in responding to customer's needs
- Frequently unable to adequately answer questions from co-workers an customers

Rate Applicant's A overall performance.

1	2	3	4	5	6	7
Unacceptable	Marginal	Somewhat bad	Neutral	Somewhat good	Good	Excellent

You are asked to give recommendations on what if any action should be taken with Employee A.

Fire	Written warning	Verbal warning	Wait	Verbal praise	Monetary raise	Promotion and raise
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Appendix I

Performance Appraisal Five

You are asked to review Employee A's performance and give recommendations.

Here are some behaviors and traits Employee A demonstrates:

- Is in constant conflict with other co-workers
- Treats customers as burdens and gives poor service
- Demonstrates little knowledge necessary for the position and shows no effort to learn

Rate Applicant's A overall performance.

1	2	3	4	5	6	7
Unacceptable	Marginal	Somewhat bad	Neutral	Somewhat good	Good	Excellent

You are asked to give recommendations on what if any action should be taken with Employee A.

Fire	Written warning	Verbal warning	Wait	Verbal praise	Monetary raise	Promotion and raise
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Appendix J

Self-Reported Appraisal Ability and Performance Scales

Compared to others who are taking this test, how well did you think you did?

1	2	3	4	5	6	7
Very below average	Below average	Slightly below average	Average	Slightly above average	Above average	Very above average

In general, how would you rate your ability to read other people?

1	2	3	4	5	6	7
Very below average	Below average	Slightly below average	Average	Slightly above average	Above average	Very above average

Appendix K  
Demographics Questionnaire

## Demographics Questionnaire:

What is your gender? *[Option of man or woman]*

What is your age? *[Type in number]*

What country do you live in? *[Option with major countries as well as other]*

Are you employed? *[Options are full-time, part-time, self-employed, or unemployed; if they are unemployed or self-employed skip to highest degree of education question]*

What is the approximate size (number of employees) of the company you are employed by? *[Type in number]*

What is your level of employment? *[Options are non-management, lower-management, middle management, and upper management]*

Approximately how many years have you been working in your current company? *[Type in number]*

The company I work for is very critical towards employees who make errors.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree

What's your highest degree of education? *[Options are less than high school or GED, high school or GED, some college, two-year degree, four-year degree, Master's degree, or PhD]*

I am generally confident in my abilities.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree

Appendix L  
Debriefing Statement

Thanks you for participating in this study. This study wanted to see if investment in an employee (being the one who recommends or helps hire the employee) will have an impact on the following attitudes and behaviors towards the employee. There was no score calculated for your choices in the hiring and evaluation simulation and this manipulation was used to measure people's perception of their own performance compared to others.

If you are interested in the final results of the study please enter in your email in the box below. [Box where they could type in their email]

Thanks again!

I, Breanna Morrison, hereby submit this thesis to Emporia State University as partial fulfillment of the requirements for an advanced degree. I agree that the Library of the University may make it available for use in accordance with its regulations governing materials of this type. I further agree that quoting, photocopying, digitizing or other reproduction of this document is allowed for private study, scholarship (including teaching) and research purposes of a nonprofit nature. No copying which involves potential financial gain will be allowed without written permission of the author. I also permit the Graduate School at Emporia State University to digitize and place this thesis in the ESU institutional repository.

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Signature of Author

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4/30/2013

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Date

The Effects of Cognitive Biases on Managerial

Decision Making

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Title of Thesis

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Signature of Graduate Office Staff Member

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Date Received