# Height as a Factor in the Perception and Evaluation of Leader-Follower Dyads

by

Lee'at J. Sharoni

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| 6/29/05 | Dr. Mindy Engle-Friedman |
| Date | Chair of Examining Committee |
| 6/29/05 | Dr. Joseph Glick |
| Date | Executive Officer |

Dr. Mindy Engle-Friedman

Dr. Kristin Sommer

Dr. Edwin Hollander
Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK

## Abstract

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Adviser: Professor Mindy Engle-Friedman

This dissertation explored whether participant perceptions of leader-follower dyads are impacted by the relative heights of the dyad members.

Study 1 considered whether height is relevant in the identification of a leader. Participants were shown two dyads, one with two men and one with two women. Within each dyad, the two images differed in height, with one image taller than the other. Two types of images were used; in one the images were identical except for their heights, and in the second the images were identical except for their heights and one other difference. Participants were asked to indicate which image in each dyad was the boss. In female dyads, the taller image was chosen more frequently. In male dyads, the taller image was chosen more frequently only when the images were identical except for height. Participants did not choose the taller male image when an additional difference existed.

Study 2 explored the possibility that the relative heights of a leader-follower dyad would impact participant evaluations of the dyad members. Participants were shown images of two people, with one person labeled "boss" and the other "employee". In one condition the boss was taller, in the second the employee was taller, and in the third the boss and employee were of equal height. Participants rated both the boss and employee, and evaluated the relationship between the dyad members. When the images were female, members of dyads with a shorter boss were rated most negatively, and were perceived as

having the least positive relationship. When the images were male, boss height did not impact participant evaluations of the dyad members.

The results of these two studies provide support for the assertion that height is a relevant topic for future study. The disparity in findings across the two image genders is discussed, and opportunities for future study are highlighted. The dissertation concludes with a discussion of the implications of these findings for employee selection, performance appraisal, and promotion decisions.

This dissertation is dedicated to:

My husband, Aharon Rabinowitz, for his dedicated support, for believing in me, and for sharing his time and talent in creating the images used in these studies.

My mother, Ann Sharoni, for enabling me to reach for my dreams.

My father, Nathan Sharoni (Z'L), for leading me to this path in the first place.

Thank you.

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## Chapter 1: Introduction

Regarded as one of society's "most blatant and forgiven prejudices" (Boyson, Pryor, & Butler, 1999), height is an overt physical characteristic which, like weight or attractiveness, is associated with stereotypes that can have a strong effect on perceptions of an individual. Preconceived stereotypes about a person's physical traits may affect perceptions of his or her attractiveness, competence, or status. These stereotypes are likely to have a powerful effect in both the personal and professional domains.

In a society where size is valued (Martel & Biller, 1987), shorter individuals may be perceived negatively. Boyson, Pryor, and Butler suggested that we live in a society with a "heightist premise: to be tall is to be good and to be short is to be stigmatized" (1999). Likewise, Martel and Biller (1987) noted that "short men are not a group that is typically viewed in social analyses when categories of handicaps are discussed. Nevertheless, very prevalent and biased cultural attitudes are directed against men of short stature" (p.2). Martel and Biller offer two examples of these stereotypes derived from modern literature:

> *"Give me a guy less than five feet eight, Johnson, and I'll give you a real bastard nine times out of ten. It has been my experience that short men get a chip on their shoulder as big as an aircraft carrier. They're just pissed off with life and God and everybody else- just because they're midgets" (Conroy, 1976, pp. 165-166).*

> *"Bond had always mistrusted short men. They grew up from childhood with an inferiority complex. All their lives they would strive to be bigger than others who had teased them as a child. Napoleon had been short, and Hitler. It was the short men that created all the trouble in the world" (Fleming, 1959, p. 25).*

These anecdotes suggest that people who fall below the height norm may be subjected to a number of negative stereotypes. Further discussion of the specific height stereotypes will be found in Chapter 2.

The impact of height has been studied in a wide variety of areas, ranging from dating relationships and physical attractiveness to perceived status and competence. Research suggests that height stereotypes may have effects on job-related outcomes, including selection, salary, promotion, and success. In particular, greater height may be associated with a number of positive stereotypes such as perceived status and competence, and shortness may be a liability in these areas (Jackson & Ervin, 1992). Furthermore, other research (see Chapter 5) has illustrated the possibility that height is a component of the leader prototype, and may therefore impact perceptions and evaluations of leaders and followers.

Therefore, one topic that warrants further study involves the effect of height on perceptions of leaders and followers. Lord and Maher (1991) argued that it is crucial to consider leadership perceptions because one must first be perceived as a leader in order to be allowed the necessary discretion and influence to perform effectively. They hypothesized that shorter people may have difficulty being perceived as leaders due to the existence of negative stereotypes, and as such, may be at a disadvantage in the realm of employment. Therefore, the connection between height and perceptions of leaders and followers should be studied more directly to ensure that work-related decisions are based on ability and skill rather than stereotypical perceptions. As such, this dissertation investigates the effects of height on perceptions of various work-related outcomes for leaders and followers.

This work brings together research from a number of disciplines, including social, industrial/organizational, and cognitive psychology. Chapter 2 discusses the research concerning stereotypes regarding height. Chapter 3 examines evidence that links height with job outcomes, including selection, promotion, and salary. Chapter 4 extends the discussion to consider the impact of height on leadership from a cognitive standpoint, arguing that height is likely to impact evaluations of leaders due to its status as a component of the leader prototype. Finally, Chapter 5 considers how height stereotypes impact the development of leader-follower exchange relationships, and the work outcomes for boss-employee dyads.

Despite the prevalence of work on the subject of height, there are a number of difficulties with this literature. Work is often theoretically rather than empirically based. Although many authors have written about height, there are surprisingly few experimental studies that allow us to draw conclusions about how height affects people's lives. Overall, the area has been dominated by correlational research that has illustrated potential relationships between height and stereotypes, leader-follower perceptions and job outcomes. However, because other potential contributing factors are not held constant, it is impossible to determine whether the relationships observed are causal. Since it is not known whether the relationships observed are due to the impact of height on these outcomes or due to some other, intervening variable, little can be said about the causal relationship between height and stereotypes, perceptions and job outcomes. Potential alternative explanations for the observed relationships between height and outcomes have been rarely explored. Additionally, where experiments were conducted,

many were methodologically weak. For example, many provide scarce information about methods used to assign participants to conditions.

To address these difficulties, Chapters 6 and 7 describe two studies aimed at more clearly determining the impact of height on the perceptions of leaders and followers by applying more stringent controls and effective random assignment of participants to experimental groups. Study 1 investigated whether height impacts the identification of a leader. Study 2 explored whether the relative heights of a leader-follower dyad impact participant perceptions of the effectiveness of each dyad member as well as of the quality of their relationship.

Additionally, another focus of this research concerned the impact of height alone versus in concert with other features. The materials used in these studies involved two kinds of image dyads. For identical images, the only difference for participants to consider was in the height of two individuals. Additionally, the choice was made to use similar but non-identical images as well. In these dyads, one other feature was varied in addition to height.

The use of non-identical images was chosen in order to mask the potential demand characteristics of height. There may be a demand to make decisions based on height, with tallness height being preferred. Therefore, people in the identical condition may have felt that, to satisfy the goals of the experimenter, their responses should reflect a preference for tallness. Therefore, their responses could reflect their expectation of what the experimenter wants rather than their own personal preferences. The use of additional elements in the non-identical dyads represented an attempt to mask those demands and therefore enhance the validity of these studies.

The addition of a non-height distractor feature in the non-identical dyads provided participants with another option, giving them a chance to make decisions based on something other than the images' height. Additionally, the use of a second feature in the non-identical dyads enabled the consideration of whether other features moderate the effect of height, and if so, how this relationship operates.

Overall, previous research conducted on the subject of height has been broad ranging. The following dissertation incorporates the contributions of this diverse literature into a focused investigation of the effects of height on perceptions of leadership.

## Chapter 2: Height and Stereotypes

A person's external characteristics affect others' perceptions of him or her in many ways. According to Melamed (1992), "physical characteristics affect people's perception, judgments, and expectations regarding issues unrelated to the physical features (p.1349)." Jackson and Ervin (1992) suggest that with regard to physical height, Western societies generally believe that "taller is better."

Evidence that physical size is valued in our society has been indicated in a number of areas. For example, one study (Boustead, Cottee, Farquhar, Jonas, Walter, & Webley, 1992) considered the relationship between coin size and perceived value by observing whether passers-by picked up two coins of different sizes with the same value – an old British 5p coin (23.5mm diameter) or a newer, smaller one (18mm diameter). Analyses showed that people were significantly more likely to pick up an old, larger 5p coin than a new, smaller one, despite the fact that they had the same monetary value.

A correlational study by Martel and Biller (1987) supported the "bigger is better" contention regarding the height of male adults. They examined the height-value relationship by asking participants to indicate their perceptions of tall, average, or short men on a number of traits. Analyses showed that men of tall and average height were seen as significantly more mature, uninhibited, positive, secure, masculine, active, complete, successful, optimistic, dominant, capable, confident, and outgoing than shorter men. The authors concluded that positively valenced personality traits and personal qualities are attributed to men of tall and average height, and that men of short height are perceived as possessing fewer of these valued qualities. Taller participants in the study

believed their height to be a distinct asset in social interactions, and shorter respondents tended to believe that their height was a definite social hindrance.

Jackson and Ervin (1992) explored the same issue with regard to both sexes by asking 237 participants to rate female or male targets who were tall, of average height, or short on several evaluative dimensions; social attractiveness, physical attractiveness, professional status, and personal adjustment. Jackson and Ervin found that the participants' evaluations of people of average height did not differ from their evaluations of tall individuals. However, shorter individuals received lower ratings on these measures than people of both tall and average height, indicating that shortness was considered a liability by participants. Similarly, Graziano, Brothen, and Berscheid (1978) asked female participants to rate photographs of tall, average height, or short men on attractiveness, likeability, and desirability as a date. Men of average height were seen as more desirable by women than either short or tall men. These findings imply that the "taller is better" rule may not apply in all conditions.

*Height and Attractiveness*

One specific area in which height stereotypes have been investigated involves the link between height and physical attractiveness. One variable which may be related to perceptions of male attractiveness is perceived masculinity. An experimental study by Elman (1977) considered the effects of varying height on trait ratings of individuals on the masculine-feminine dimension. Participants were asked to evaluate a tall or short male target based on information from a "contest application form." Analyses showed that shortness was associated with greater femininity and that the taller target was rated as more attractive and extraverted than the shorter one. However, a major difficulty with

this research is the lack of information about the selection of the scales used in this study. Elman chose the scales of passive-active, tender-tough, and gentle-rough to represent the masculinity-femininity dimension. No information was provided regarding the construct validity of these scales to support their use as measures in determining masculinity and femininity.

Perceptions of the relationship between height and attractiveness can also be deduced from the characteristics people use to describe a "perfect date." In 1954, Beigel asked participants to consider the height of prospective date. Participant responses tended to follow the cultural norm that in a heterosexual relationship, the man is expected to be taller than the woman. Beigel also requested that participants describe the characteristics of desirable males and females in order to establish "ideal" concepts for both sexes. The results followed the expected pattern; only two participants out of 76 described the ideal, preferred male as short, and only five depicted the ideal female as tall.

More recently, Shepperd and Strathman (1989) asked male and female participants to complete a questionnaire about their dating preferences. Their results showed that 95% of 57 females preferred males who were taller than themselves as dates, and 80% of 39 males preferred shorter women. Shepperd and Strathman also asked participants to rate the attractiveness of short versus tall individuals in photographs, and found that taller men in photographs were rated as more attractive. Additional support for the male-taller norm in heterosexual attraction was provided by a meta-analysis (Pierce, 1996). Analyses of 14 studies indicated that females prefer partners who are as tall as or taller than themselves, and males prefer partners of equal or shorter height than themselves. Similarly, Keyes (1980) found that of the seventy-nine women surveyed,

only two (both 5'11" tall) said they would consider dating a man who was shorter than they were.

The studies described above have suggested that in the realm of social attractiveness, the man is expected to be taller than the woman. As such, these results suggest that given prospective dating relationships, tall men and short women would be at an advantage. Although this may appear to imply that men should be tall and women short, these findings contradict Jackson and Ervin's (1992) conclusion that shortness is a liability for both genders. However, Jackson and Ervin reconcile these seemingly disparate results by noting that the ratings of women in their study indicated that increased height was a factor in ratings of professional status but not social attractiveness. Therefore, while shortness may be beneficial for women in the dating realm, tallness may be more beneficial in the professional world, where height is important for both women and men.

Despite some mixed findings, the research on dating and attractiveness indicates that height may be a component of attractiveness. If height is a component of attractiveness, then it is possible that Dion, Berscheid and Walster's (1972) "what is beautiful is good" stereotype, which holds that attractive individuals are assumed to possess other socially desirable qualities, would apply. Therefore, tallness might lead perceivers to believe that in addition to height, a person possesses other positive characteristics, such as occupational status or leadership ability. This assertion is supported by Wallace (1941), who asked college students to make judgments about photographs, and found that taller individuals were rated as possessing more positive qualities. For example, they were often perceived as good-looking and likable.

Height has been established as a relevant factor in the realm of physical attractiveness and dating. However, research has investigated the effects of height in other areas.

*Height and Dominance*

Young and French (1998) suggest that height acts as a heuristic for dominance. Evidence supporting the claim that height affects perceptions of dominance for both self and others was provided by several authors. First, Melamed (1992) argued that "positive" physical features, such as tallness, are related to a person's increased confidence and self-esteem. To test this hypothesis, Melamed conducted a survey which asked respondents to provide their height as well as responses to the 16 PF, a common personality measure (Cattell, 1970). Significant correlations between height and personality showed that the taller the person, the more likely he or she was to be dominant, assertive and self-assured as defined by the 16PF. This finding concurs with the Roberts and Herman's (1986) suggestion that tall individuals may develop greater self-worth and confidence because they are treated with more respect, although no data was provided to support this assertion.

An experimental study by Montepare (1995) considered perceptions of dominance among preschool-aged children. The participants, 28 children ranging from four to six years of age, were asked to judge pairs of male or female targets in terms of their perceived dominance. The relative heights of the targets were manipulated. T-tests showed that taller male and female targets were perceived as being more dominant than shorter individuals.

These results were supported in a similar experiment by Boyson, Pryor, and Butler (1999), who also manipulated the height of a female target as opposed to a male one. The study, which used a dominance scale created by Mehrabian (1981), showed that a taller female was perceived as significantly more dominant than a shorter male. Overall, these studies provide evidence for the link between increased height and perceptions of dominance. When one individual is taller than another, the taller person is perceived as more dominant than his or her partner.

*Height and Status*

The largest body of literature regarding height has considered the relationship between height and status. Dannemaier and Thumin (1964) investigated the relationship between status and perceived height in order to determine whether judgments of height would be influenced by the authority status of the person being evaluated. Their study asked nursing students to estimate the heights of the assistant director of the school, one of their instructors, the president of their class, and a fellow student, and calculated the differences between actual height and the estimates. Results indicated that the heights of the director and instructor were magnified, with the highest status magnified the most. Conversely, the students were estimated to be shorter than they were, with the height of the lowest status students being the most underestimated. The authors concluded that a significant positive relationship exists between perceived height and the authority status of the person being evaluated.

However, Wilson (1968) noted that a major problem with Dannemaier and Thumin's study involved the differences between the stimulus persons. Because the study utilized different known stimulus individuals (fellow staff and students at the college)

who varied in a number of ways, the estimates of height may have been determined by characteristics other than authority status (i.e., facial characteristics or personality). For example, the student target may actually have been shorter than the higher status targets. Wilson's study reexamined the relationship between status and height while controlling for other variables by using a single, unfamiliar stimulus person who was ascribed an imaginary status. His study asked participants to estimate the height of a person who they were told was either a student, demonstrator, lecturer, senior lecturer, or professor. The results supported Dannemaier and Thumin's (1964) conclusion, showing that as ascribed academic status increased, students' estimation of the individual's height increased, with significant differences between estimates for the various status levels. This conclusion was also supported by Lechelt (1975), who asked participants to rate the heights of men in several different occupations, and later obtained measures of how much participants esteemed that occupation. The findings showed that ratings of height were highly correlated with perceived occupational esteem for both male (r. =.91) and female (r. =.92) participants.

In contrast, Lerner and Moore (1974) conducted a similar experiment and found that academic status did not affect perceptions of height. However, this finding may have been due to the status types used; undergraduate, graduate student, Master's, Ph.D. candidate, and Ph.D. graduate. Because these rankings are more similar to each other (i.e., reflecting several types of students and graduate students), there may have been less perceived variation in rankings than in the previous studies, where status levels ranged from student to professor. Thus, the failure of this study to find a significant relationship should not be considered a serious challenge to previous findings.

Another difficulty with the status literature can be found in the results of a study by Rump and Delin (1973). Using a similar method to the other studies described above, 247 undergraduate students estimated the height of a tall or short novel stimulus person. The results showed that both short and tall targets who were attributed a high status tended to have their heights estimated more accurately than targets who were given a lower status. The authors suggested that based on these results, the status-height phenomenon can be explained not in terms of greater value, but rather due to differential attention. According to this interpretation, participants attend more to new acquaintances of high authority status and are therefore more accurate in assessing the height of high status people. This suggests that height may be a salient feature to which people attend when the person who is of central focus is of high status. Because these results seem to indicate that status is not related to perceptions of height, this finding may therefore be problematic for the literature in this area. However, more research will be required to confirm this theory. Overall, despite mixed results, this line of inquiry has indicated the existence of a potential positive relationship between status and perceived height.

Egolf and Corder (1991) found that there may be an element of truth to the stereotypical association of height and status. To further address the connection between perceived height and occupational prestige, the authors performed two studies that looked at the actual heights and managerial status of individuals in a real employment setting. The first study recorded employee height in a *Fortune 500* company to see if height differentiated managers from non-managers. Analyses found that higher status employees were significantly taller than low-status individuals, with no interaction between gender and status. However, because participants in this study were volunteers and not

necessarily randomly selected to participate, a self-selection bias may have existed. Therefore, the authors conducted a second study in a different organization, selecting 50 employees of each gender and job status category at random from a pool of 1600 people. The analyses supported the conclusion of the earlier study, that higher status employees were significantly taller than lower status employees, regardless of gender. These two studies clearly support the idea that height is strongly connected with job status, as illustrated by Dannemaier and Thumin (1964), Wilson (1968) and Lechelt (1975). The case for height and status may be best articulated by Martel and Biller (1987), who note that "research solidly demonstrates that greater height is positively related to greater social power and perceived social status. The taller individual is able to attain a more commanding position among others, and he benefits from the positive attributions associated with his height (p.40)."

*Height and Competence*

Stereotypes about height have also been linked to perceived competence. An archival investigation by Young and French (1996) considered the heights of United States presidents. This study compared the heights of several "great" U.S. presidents (Lincoln, Roosevelt, Washington, and Jefferson) to the heights of "failures" such as Johnson, Buchanan, Nixon, Grant, and Harding. The classifications of "great" or "failure" were derived from the 1982 Murray-Blessing Poll (Stanley & Niemi, 1992). Analyses showed that the "great" U.S. presidents were significantly taller than the perceived "failures". Additionally, Abraham Lincoln, the tallest president, was also ranked as the greatest. The authors therefore concluded that height is related to perceived competence for leaders of the United States. However, as the results of this study are

correlational in nature, it is relevant to consider other, experimental evidence supporting the link between height and perceived competence.

Regarding perceived competence and height in an educational setting, Villimez, Eisenberg, and Carroll (1986) asked elementary school teachers to rate their students in terms of academic aptitude, athletic ability, social competence, and independence. Male student height was positively correlated with teacher attributions of competence in all areas, though this pattern was not found regarding teacher perceptions of female students.

A series of experiments by Eisenberg, Roth, Bryniarski, and Murray (1984) considered the relationship between toddlers' height and both perceived and actual competence in the social and cognitive realms. In the first study, mothers of preschool children were asked to look at photographs of tall or short toddlers and to indicate their perceptions of these children on a variety of social and cognitive abilities (i.e., getting along with others, doing well in school, taking care of self, ability to concentrate). After controlling for perceived age, mothers rated larger boys and girls as more competent than small children. A second experiment measured the heights of children 4 to 5 years of age, and assessed their cognitive ability using a Piagetian logical skills task and a sociometric task. After partialing out the effects of age and weight, tallness was significantly related to actual cognitive ability, but only for boys. Additionally, these children were also asked to indicate their preferences regarding their classmates. The findings showed that popularity as measured by peer evaluations was positively related to height for both genders.

In an experimental study of an adult population, Cann (1990) manipulated information about an individual’s professional and social competence in terms of

academic performance, job performance, social activities, and popularity. Participants were then asked to assess the height of the stimulus person. The analyses showed that predicted height varied with ascribed levels of professional and social competence. Competent individuals were expected to be taller as well as more physically and socially attractive. Cann concluded that perceived competence affects the perception of an individual's height, thereby supporting a possible relationship between perceptions of height and competence. Perceptions of height and competence may work in both directions. Tall people are expected to be more competent, and competent people are expected to be taller. Furthermore, because Hollander suggests that "leadership effectiveness depends upon followers perceiving and responding to the leader's display of competence" (Hollander, 1978 p.115), it is possible that height may be particularly salient in determining perceptions of leader competence.

The results elaborated above have described positive relationships between height and several variables, including perceived dominance, status, and competence. Furthermore, some researchers have considered the means by which third-party perceptions may come to affect these variables. Egolf and Corder (1991) cite the possibility that height is important because it affects people's initial perceptions of a tall or short individual. For example, taller people may be assigned to higher status vocations. This assertion was supported by Judge and Cable (2004) who found a connection between height and social esteem, a term which describes others' regard for an individual. Judge and Cable suggest that taller people actually become more effective because the esteem provided by their height enables them to reach higher levels of

success. As such, height may affect actual competence as well as perceived competence through the action of a self-fulfilling prophesy.

Egolf and Corder (1991) also provide a second explanation for the relevance of height. They suggest that taller individuals are actually more capable than shorter people. This is suggested in a study by Humphreys, Davey, and Park (1985), who considered height and intelligence in a longitudinal study of children aged 8-12. The analyses found evidence of a correlation between early height and later intelligence. However, this debate is still in a very preliminary state. Both sides provide minimal supporting evidence, and future work will be required to fully discern the means by which perceptions of a tall or short individual come to impact his or her actual behavior.

In sum, greater height may be advantageous because of its positive relationship with stereotypes regarding physical attractiveness, and perceptions of dominance, status, and competence. These stereotypes are potentially applicable to the world of work and to the attainment of leadership roles. For example, if height is related to status, taller individuals may be perceived to be of higher status. As such, others may conclude that a tall person is deserving of a leader role. Similarly, if height is salient in determining perceptions of leader competence, tallness may be associated with perceptions of increased suitability for leadership.

Although the pattern of results discussed above clearly indicates that height-based stereotypes do have an impact on perceptions of short and tall individuals, the studies described in this chapter cover a wide variety of areas and are often hampered by limitations including the use of correlational approaches and theoretical work that does not provide supporting data. Evidence of a correlation reflects only the existence of a

relationship between two variables and does not reflect causality or which variable is predictive of the other. Furthermore, few controls were applied in previous correlational research, and the existence of a correlation alone does not rule out plausible rival hypotheses derived from other existing differences between a taller person and a shorter person. , Specifically, it is unknown whether observed relationships were due to height or to some other variable. For example, if participants respond to images of two separate individuals who are different in a variety of ways, it is unknown whether participants reacted to the difference in their heights, or whether one image was, for example, more attractive, better dressed, thinner or blonder.

Furthermore, where experiments were conducted, little information is provided about the use of random assignment. The absence of random assignment in these studies makes it difficult to draw conclusions with regard to the impact of height on dependent variables because it is not known whether existing differences between participant groups affected the results in a way that was unrelated to the height of the stimuli.

Therefore, more rigorous experimental work, with appropriate controls and with participants randomly assigned to experimental groups, will be required to provide supporting data-based evidence for the height-stereotype link.

## Chapter 3: Effects of Height Stereotypes on Job-Related Outcomes

A number of studies have investigated the relationship between perceptions of height and career-impacting decisions. This chapter will therefore consider the effect of height in the areas of selection, compensation, promotion, and career success.

Considerations of how height influences job outcomes such as selection and promotion have been met with some debate. One view, described by Hensley and Angoli (1980) suggests that height may affect selection decisions but not promotion of the selected individual. The rationale is that height influences first impressions, but that its effect diminishes in subsequent interactions between an employer and subordinate. As such, when managers make a selection decision about a person they do not know well, their decision may be based to some extent on first impression. However, if a manager is familiar with the employee, as in a promotion decision, physical characteristics will tend to have a lesser effect.

The opposing viewpoint, elaborated by London and Stumpf (1983), holds that unlike selection decisions, promotion decisions are made not by personnel professionals, but by managers in all levels of management. Therefore, this view suggests that because the average manager may be less experienced at making unbiased personnel decisions than selection specialists, promotion decisions are more likely to be based on height than selection decisions. However, it is necessary to consider the empirical evidence about the effect of height on these variables before attempting to resolve this theoretical controversy.

*Height in Selection and Promotion*

One author has considered whether height affects an individual's chance of securing employment. In 1969, Kurtz asked 140 sales managers which of two equally qualified candidates they would hire; one who was 6'1" or one who was 5'5". The results showed that 72% of the participants chose the taller candidate. Kurtz concluded that taller men were hired more often than shorter men, even when both applicants were equally qualified.

Height may also affect promotion decisions. Melamed and Bozionelos (1992) examined the relationship between height and managerial promotion among British civil service managers (71 female, 61 male) using the Managerial Progress and Achievement Quotient (MPAQ), an index of progress through an organization's hierarchy based on the person's hierarchical level, age, and tenure. The analyses revealed that MPAQ score was positively correlated with height for both male and female participants. The authors concluded that height was a factor in promotion. These researchers suggest that height may influence promotion through a self-fulfilling prophecy in which tall people are expected to be more successful, and are more likely to behave in ways that reinforce these beliefs. Therefore, greater height may potentially affect an individual's career progress in addition to their initial selection. The above studies have indicated that height may be related to both selection and promotion. However, the research in this area has been limited to fewer than five studies.

*Height and Salary*

Several correlational studies have provided a link between height and an individual's starting and later salaries. In 1968, Deck correlated height and salary and

found evidence of higher earnings among taller graduates of academic programs in engineering, science, education, and library administration. Across all samples, males between 6’0” and 6’3” showed significantly greater salaries than males who were less than six feet tall. For example, in one sample, men under 6 feet in height earned an average of $701 per month, while men between 6’0” and 6’3” earned $729 per month. Another survey (Deck, 1971) supported this evidence with the finding that graduating college seniors who were 6'2" or taller received a starting salary 12.4% higher than graduates who were under six feet tall.

Additional support for the relationship between height and salary was provided by Loh (1993), who analyzed data from the National Longitudinal Survey Youth Cohort in 1981-1982. Correlational analyses which controlled a number of variables including weight, education, age, and region, showed that for men, a difference of approximately 7 inches in height resulted in a wage rate that was 6.6% higher for the taller person. Similarly, taller women tended to earn about 4% more than their shorter female counterparts.

In order to explain this phenomenon, Frieze and her colleagues (1990) suggested that although salary is mainly determined by factors such as experience and work performance, external factors such as height may also affect income. Their survey considered the relationship between height and the starting and later salaries of 1433 MBA graduates (859 male and 355 female). Regression analyses showed height to be significantly correlated with the starting and later salaries of males after controlling for variables such as work experience, weight, and race. This effect was more pronounced in the case of current salary, where every additional inch of height raised the individual’s

gross annual salary by $600. This result may be related to promotion as well. Taller individuals may earn more as their careers progress as a result of their increased rate of promotion. These researchers did not find a significant height-salary link in women, and suggested that this may be an artifact of the lower response rate among females. Melamed (1994), however, illustrated the relationship between height and salary for women. His study considered the effect of height in a survey of 435 male and female British employees and found a significant positive relationship between height and the salaries of both men ($p. <.001$) and women ($p. <.01$), even after controlling for the effect of age.

In 2004, Judge and Cable conducted four studies which applied survey and interview data to test the relationship between height and salary. This paper addressed a problem found with many previous studies of salary and height in which both variables were reported simultaneously, raising the possibility that participants exaggerated both their income and their height. Therefore, Judge and Cable included measurements of height and salary at different points in the participants' lives. Their results showed that height was significantly and positively related to income in all four studies, even after controlling for gender, weight, and age, and regression analyses indicated an increase in salary of between $728-$897 per year with each additional inch of height. The authors also explored the connection between height and salary across multiple occupations. Although significant correlations were found even in occupations where an individual's height is of little consequence (e.g., craftsperson), they found higher correlations between height and earnings for occupations which rely on social interaction, appearance, and stature in order to achieve success (e.g., sales and management).

Furthermore, Judge and Cable (2004) found that the relationship between height and predicted earnings did not decline over time. This data indicates that the effect of height on salary is not merely confined to the hiring context, as suggested by (Hensley & Angoli, 1980), who argued that the relationship between height and career success would dissipate as soon as managers have the opportunity to observe an employee's actual performance. These studies, which explored the connection between height and salary, support the assertion that tallness is associated with increased income.

*Height and Success*

The effect of height on job success has also been investigated by a number of authors, mainly in the areas of academia, police work, and sales. In order to investigate the relationship between height and actual performance in academia, Hensley (1993) sampled the heights of male faculty in 30 university departments. Using job title as a measure of academic success, the results indicated that there was a significant positive increase in height with each additional level of academic rank above the overall mean height of males in the general population. Assistant professors were 1.24 inches taller, associate professors were 1.50 inches taller, and full professors were 1.97 inches taller than the actual average height of men. Hensley concluded that taller professors are likely to be more successful in the academic world.

In the area of police work, Hensley and Cooper (1987) surmised that a taller officer would be more equipped to handle unruly officers and would be less likely to be assaulted or injured. Lester and Sheehan (1980) investigated this assumption regarding the performance of short officers by asking 29 police supervisors about their opinions of short or tall patrolmen. The results indicated that the supervisors tended to perceive short

officers more negatively than average or tall officers. Sixty-two percent of police supervisors believed short officers to be a source of discipline problems and complaints, and 55% believed that they cause poor morale. Comparatively, tall patrolmen were perceived by police supervisors to have the least disciplinary problems, and patrolmen of average height were perceived as having the most positive relationships with their co-workers. However, these perceptions did not appear to affect police performance. Azen, Snibbe, and Montgomery (1973) conducted a 20-year longitudinal study of variables associated with police performance and found that height was not a significant predictor of supervisor ratings of policemen or of organizational rank, accident rates, and employment status.

Finally, in the area of sales, Hensley and Cooper (1987) described the perception that taller individuals are more dominant, forceful, and impressive. In keeping with this stereotype, Otis (1941) described a test for selecting salesmen that included the item “Is he physically large and impressive?” based on the assumption that sales performance was related to size. In a 1923 study, Johnson compared the heights of salesmen of superior and average sales performance. He found that 17% of superior salesmen were over 6 feet tall, as compared with 8% of moderately performing salesmen who were over 6 feet tall. However, this effect should be considered minor because there were very few superior performing salesmen in the sample (54, as opposed to the 506 “ordinary” performers in the sample).

A later correlational study by Lamont and Lundstrom (1977) examined the relationship between height and sales performance among 143 salesmen in 13 U.S. regions over a two-year period. The researchers found a significant, positive correlation

between height and performance as measured by a 63-item company performance appraisal form that included managerial ratings of various aspects of work performance.

A 2004 paper by Judge and Cable proposed a theoretical model of the relationship between height and career success, which suggested that height affects career success through several mediating processes. Specifically, the authors suggest that height impacts both self esteem and social esteem, which in turn impact both objective and subjective performance, which finally impact success as defined by income and the attainment of leadership roles. Judge and Cable conducted a meta-analysis of 44 studies to test several of these linkages between height and its proposed mediating factors. Results found that height was significantly related to an individual's level of social esteem, ascendance into a leadership role, and both objective and subjective performance. However, the authors suggest that height had a greater effect on immediate variables such as social esteem than on more distal factors in their model, such as career success. Additionally, Judge and Cable (2004) note that their meta-analysis is subject to the limitations of the literature it summarizes, which, as is evident from the above literature, is mainly focused on only three occupations; police work, academia, and sales. Furthermore, in addition to the limited content of these investigations, the experimental designs used in these studies are often not methodologically sophisticated and the potential for bias is great.

In summary, although several studies have indicated the presence of a relationship between height and success, there is not sufficient research to conclude whether increased height impacts perceptions of performance and job success in multiple occupations.

Overall, this chapter has outlined research which links height with several occupational factors, including job selection and promotion, salary, and job success. Two

studies illustrated the link between height and selection and promotion, five highlighted the relationship between height and salary, and six found significant positive correlations between tallness and success in the areas of police work, academia, and sales. Although all these studies were correlational in nature and do not demonstrate a causal connection, their findings taken as a whole suggest that height may have an impact on people's lives, careers, and occupational advancement.

## Chapter 4: Height in the Leadership Prototype

The previous chapters have considered height in reference to a variety of stereotypical perceptions and work-related outcomes. It has been suggested that height may be a relevant dimension in the determination of perceptions of status and competence, and that taller individuals may have an advantage in the realm of selection and promotion. This chapter will consider how the findings described in Chapters 2 and 3 relate to the perceptions of individuals in leadership roles.

### *Theory of Leadership Prototypes*

Research on leadership has begun to consider how the expectations and perceptions of others influence reactions to a leader. Cronshaw and Lord (1987) believe that preconceptions about the characteristics required for successful leadership affect the perceptions and evaluations of those who observe a leader in action. Ultimately, these "implicit leadership theories" may serve as a framework within which evaluators integrate and simplify the vast amounts of information about a particular individual in order to make conclusions about that individual's leadership ability (Rosch, 1975, 1978; Lord, De Vader, & Alliger, 1986; Lord, Foti, & Phillips, 1982).

Categorization theory, first described by Rosch (1975), suggests that due to a need for cognitive economy, people automatically classify the objects in their environment into understandable categories. One category is distinguished from another by its prototype, an abstract representation of the most stereotypical member of a category (Rosch, 1975). Incoming stimuli are then categorized in terms of how well they match the category prototypes. Rosch (1975) demonstrated this in a study that asked participants to judge stimuli with regard to how typical they were of a particular category (i.e., robin vs.

ostrich for the category bird). Items that had the most traits in common with the prototype were rated as "better" examples of the category, leading Rosch to conclude that a stimulus is identified as a member of a category based on how well its attributes match the prototypical member of that category.

Lord, Foti, and Phillips (1982) applied Rosch's categorization theory to the area of leadership. They suggest that perceiving someone as a leader involves a process of determining whether or not that person possesses the qualities expected of a leader. To categorize a new individual as a leader or a non-leader, an observer will consider whether that individual possesses the traits believed to be common among leaders. The use of these perceived "common traits" helps an observer make a distinction between prototypical leaders and non-leaders.

Similarly, Nye and Forsyth (1991) believe that followers compare an individual to their leadership prototype, label him or her as a leader or non-leader, and use this label to guide their evaluations of the person's behavior. Therefore, people who are believed to possess attributes and behaviors that are consistent with observers' leadership prototypes will be seen as leaders, while those missing these characteristics or possessing non-prototypic attributes and behaviors will not be seen as leaders. For example, characteristics such as intelligence, dominance, or status may be part of a leader prototype, and a person who possesses these traits will be more likely to be perceived as a leader.

Chemers (1992) also suggests that perceptions of leadership are guided by these prototypes, and that an individual's leadership potential and success may be determined to some extent by whether his or her traits and behaviors adequately match observer

expectations. He adds, “if the image of the leader overlaps with the prototype, the observer will attribute all the characteristics in the prototype to that leader” (p. 297). Cronshaw and Lord (1987) also suggested that those whose features are good “prototype fits” may be automatically recognized as leaders.

Evidence regarding the existence of leader prototypes has come from a variety of sources. Foti, Fraser and Lord (1982) conducted a study in which participants were asked to rank phrases such as “is intelligent” or “displays good judgment” for applicability to leaders of varying types and effectiveness. The analyses showed that participants used internal prototypes to make distinctions between the characteristics possessed by different types of leaders and between effective and ineffective leaders. This finding was supported by Lord, Foti, and DeVader (1984), who conducted a series of studies showing that highly prototypical attributes were useful in distinguishing leaders from non-leaders. In the first study, participants were asked to generate lists of attributes for various leader and non-leader categories. Analyses of these attributes identified highly prototypical characteristics that were useful in distinguishing leaders from non-leaders. In a second study, participants were presented with behaviors of varying leader prototypicality, and were asked to indicate how well those behaviors described their own images of a leader. Analyses of the reaction time data showed that there was a significant negative correlation between prototypicality and reaction time, leading the authors to conclude that prototypical items were more easily accessed in memory.

*Height in the Leader Prototype*

While categorization is an efficient way of processing information, it is not always accurate (Rosch, 1978). A leader prototype may include characteristics that are

unrelated to an individual's actual performance as a leader, such as race, class, gender, or height. Given findings showing that participants tend to assign higher ratings to leaders whose qualities matched the content of their own leader prototypes (Nye & Forsyth, 1991), the possibility for bias arises. For example, selectors may overlook valuable candidates due to their reliance on irrelevant prototypical information.

Bales, Cohen, and Williamson (1979) describe that issue within the framework of gender bias in the workplace. Women, they claim, are discriminated against due to the incongruity between the characteristic female prototypes and leader prototypes. They argue that because people are exposed to more male leaders, maleness becomes a part of the leader prototype. Therefore, when women manage to achieve leadership positions in masculine fields, they may face problems with credibility. Similarly, Hogg (2001) notes that social minorities based on race, ethnicity, gender, or disability may find it difficult to assume and maintain leadership roles because they are intrinsically less prototypical than majorities in many business settings.

The previous chapters illustrated a potential link between height and a number of stereotypical perceptions including status, competence, and dominance, which may contribute to the success of a given leader. As such, it is possible that above-average height may also be a component of the leader prototype. Taller people may reap the benefits of prototypicality when attaining and acting in leadership roles. A study by Lindeman and Sundvik (1994) provides evidence that height may influence perceptions of fitness for a leader role. Lindeman and Sundvik examined the impact of height on assessments of managerial potential. The study, conducted in a Finnish company, considered female job applicants' height and their superiors' evaluations of their

managerial abilities on a 30-item questionnaire. The evaluation was based on a job analysis and was used as a criterion for personnel decisions. The analyses showed that after controlling for education level and aptitude test scores, taller employees were considered more suitable for managerial positions, as evidenced by significantly higher scores on the supervisor's evaluation questionnaire.

Taller individuals may be more likely to be perceived as leaders and as more likely to succeed in leadership roles. Conversely, a person who is short may be viewed by others as lacking the necessary characteristics of a leader. As a result, this short individual may have trouble gaining leadership roles and being perceived as effective in them. Similarly, it is possible that those who fail to meet the height requirements of a leader prototype may encounter difficulties in attempting to influence others (Cronshaw & Lord, 1987).

Overall, the research discussed in this chapter raises the possibility that height is a component of the leader prototype and that tallness is associated with observers' categorization of an individual as a leader. Observer judgments of bosses and subordinates may be guided by the idea that leaders are expected to be taller than their subordinates. Furthermore, the possibility that prototypical perceptions include height biases highlights the need for further research investigating the impact of the heights of leaders and followers on others' evaluations of both groups.

## Chapter 5: The Potential Effect of Height on Leader-Member Relations

Height stereotypes may also impact leader-follower relationships. One way to understand height's influence on this relationship is through the theoretical application of transactional leadership theories.

Many leadership theories, such as path-goal theory (House, 1971) and situational leadership theory (Hersey & Blanchard, 1982) take transactional approaches to leadership, in which leadership is seen as an exchange process. Leaders are responsible for providing support and guidance to subordinates in return for loyalty and quality work output.

The leader-member exchange (LMX) model discussed by Graen (Dansereau, Graen, & Haga, 1975; Graen, 1976; Liden & Graen, 1980; Graen, Hoel & Liden, 1982; Graen, Novak, & Sommerkamp, 1982) focuses on the dyadic relationship between a leader and a follower. The development of leader-follower relationships in this way results in two categories of exchanges: the in-group (a high quality exchange characterized by high trust, interaction, support, and reward) and the out-group (characterized by low trust, interaction, support, and reward). Those in the leader's in-group are considered to have a "high LMX" relationship. For subordinates not in the leader's in-group (out-group members), the leader relies on rules, policies, and authority to ensure adequate performance in a "Low LMX" relationship.

### *LMX and Work Outcomes*

LMX theory holds that the quality of the relationship that develops (in terms of High vs. Low LMX) is predictive of work outcomes. Several authors have provided evidence of a positive relationship between LMX quality and work outcomes (Dansereau

et al, 1975; Liden & Graen, 1980; Graen, Hoel, & Liden, 1982; Graen, Novak & Sommerkamp, 1982). A meta-analysis by Gerstner and Day (1997) considered 85 independent studies of LMX, and found significant, positive correlations between the quality of leader-member exchanges as indicated by the members of this exchange and a number of work outcomes, including objective performance, satisfaction with supervision, overall satisfaction, and organizational commitment. Significant negative correlations were also found between LMX quality and turnover such that leader-follower relationships with lower LMX tended to have higher rates of job turnover. The authors concluded that having a high quality relationship with one's supervisor can positively affect the work experience.

These studies indicate that congeniality in leader-member interactions may have an effect on work outcomes such as effort (Danserau et al, 1975), performance (Liden & Graen, 1980; Graen et al, 1982), turnover (Graen et al, 1982), and a number of other occupational outcomes (Gerstner & Day, 1997).

*Height as a Determinant of LMX Quality*

What factors impact the quality of a dyadic relationship? One suggestion is that individual stereotypes held by the leader and follower may have a strong effect on the relationship that develops between them. Previous authors have considered the effects of race and gender stereotypes on the quality of a leader-follower relationship (Garland & Price, 1977; Green & Mitchell, 1979; Hill, 1998). For example, Hill (1998) conducted a study that investigated the impact of gender perceptions on LMX quality. Results showed that dyad members who had more positive attitudes toward female managers were more likely to develop a high quality relationship with a female leader.

If stereotypes regarding race and gender impact the quality of a dyadic relationship, it is also possible that other stereotypes, such as those regarding height, may also be relevant in this context. For example, if a potential follower has positive attitudes toward a tall boss, he or she may be more likely to develop a strong relationship with a tall boss than with a short boss.

Another factor that affects the development of leader-follower exchange relationships is compatibility. The assumption is that if members of a boss-employee dyad are compatible in some way, they are likely to have closer and more effective relationships. Some theoretical work on leader-follower exchange relationships suggests that compatibility between a leader and follower affects the quality of exchange that develops (Dienesch & Liden, 1986). For example, Graen and Schiemann (1978) found an association between the degree of leader-member agreement on job issues and the quality of their relationship. Other researchers have also established a connection between both attitudinal and demographic similarity and LMX quality (Tsui & O'Reilly, 1989; Zenger & Lawrence, 1989; Liden et al, 1993; Phillips & Bedeian, 1994; Murphy & Ensher, 1999), demonstrating that perceived compatibility on these factors has a positive influence on the quality of a leader-follower relationship.

Perceived compatibility on many factors, including demographic, personal, and interpersonal attributes, may contribute to the development of a leader-follower relationship (Phillips & Bedeian, 1994). The work on height prototypes suggests that people may be predisposed to expect that a leader will be taller than a subordinate. As such, dyads in which the leader is taller than the subordinate may be perceived as more compatible. Conversely, members of a dyad in which the leader is shorter than the

subordinate may be viewed as not compatible, and therefore unlikely to develop or reap the benefits of a positive relationship. It also is possible that perceived compatibility in the heights of leaders and followers may affect the quality of the relationship in a leader-follower team, and therefore, their work output. However, no research has as yet considered this aspect of height compatibility. Therefore, the study described in Chapter 7 explored this possibility.

However, it is first necessary to determine whether height impacts the decisions and choices that people make regarding leadership. The studies described in Chapter 6 investigated the potential connection between height and perceptions of leaders and subordinates, and explored whether the choices that people make regarding leader and follower roles are affected by height.

## Chapter 6: Study 1

The objective of this study was to determine whether participants use height to categorize people as leaders or followers. If height is an influential or important component of the leader prototype, it was expected that participants would use height in determining who was a leader in the absence of other salient information. It was expected that participants would be more likely to perceive a taller person as the leader and a shorter person as the subordinate when given images of two people and asked to decide which of the two people is the leader.

The experimental approach used in the present investigation reflected an attempt to study the impact of height on perceptions of leadership while addressing the limitations plaguing the largely correlational body of research on height. The lack of sufficient control in these earlier studies made it difficult to eliminate other factors that may have influenced participants' responding. If differences between the stimuli other than height were not controlled, it is possible that these qualities might have had an impact on participant behavior. For example, if one stimulus image was more attractive, thinner, better dressed, or more nicely groomed, participants may have responded to these non-height differences, making it difficult to identify the true impact of height.

Furthermore, a paucity of information has been provided by researchers in the field concerning the assignment of participants to groups. The likely absence of random assignment raises the possibility that inherent differences between the participants in the different experimental groups affect results. This possibility calls into question the outcomes of these previous studies, as the idiosyncratic responding of a particular participant group may have had substantial impact on the data outcomes, and may have

overshadowed the specific responding to the height of the stimulus images. The magnitude of this influence is unknown.

The experimental design described below includes discrete stimuli that are more carefully controlled than those used in previous research on the subject of height. The use of these controls helps to eliminate some of the external sources of influence that could impact participant responses to the individual stimuli. Furthermore, the use of appropriate random assignment of participants in this study helps to ensure the equivalence of experimental conditions. This methodology enables causal conclusions about the effect of height on the choices people make about leaders and followers.

This study included only same-gender dyads picturing either a pair of two females or a pair of two males. The use of both female and male dyads enabled the exploration of whether participants would respond to height differences in male-male dyads as they would to female-female dyads. Since the investigation focused on the importance of image height in participants' decision making, it was thought that mixed-gender dyads would add interesting but unwanted complexity given the potential existence of female and male stereotypes about leadership.

Finally, this study also explored the possibility that participants would react differently to height as additional features were introduced. Therefore, the images used in this study include both identical dyads whose members differed only in height, and similar but non-identical dyads, in which an additional feature was varied as well as height.

The use of both identical and non-identical dyads in this study arose from an attempt to identify two completely different but equivalent images. Although a great

amount of time was devoted to controlling for perceived attractiveness, dominance, and likeability in initial stages of this study, in every case, one image was preferred. It appears that physical differences had such a strong impact on participant reactions that the only way to avoid confounding factors was to more completely control for these differences.

As a result, the choice was made to use identical dyads in which the only difference between the two dyad members was in their height. However, the use of such completely identical images raised the possibility that participants would respond to the demand characteristic by selecting the taller person. The research on height reflects a preference toward tallness. There may be a demand for participants to select taller images, such that participants may believe that selecting the taller image is what the experimenter expects of them. Therefore, similar but non-identical dyads were also tested in this study. These dyads involved two images that were identical with the exception of their heights and one additional variable.

The addition of a second feature was intended to mask the potential demand to select the taller image as boss and to clarify participants' behavior based on personal choice and perhaps motivation for making their choices. Several researchers have attempted to isolate the motives behind others' decisions. For example, a study by Snyder, Kleck, Strenta, and Mentzer (1979) explored a strategy for detecting motives that people might want to conceal. Their study considered the desire to avoid contact with the physically handicapped. Their results showed that participants were more likely to avoid contact with a handicapped person if the decision to do so was framed in the light of choosing between two different movies. In the present study, the addition of a second

feature enabled participants to select the taller candidate while providing for an alternative justification for that decision. Specifically, because height was not singled out as the only difference between the two images, participants were free to respond to the height variable without directly behaving in a way that indicated that they were doing so.

*Hypotheses*

Proponents of prototype theory suggest that to categorize an individual as a leader, an observer will consider whether that individual possesses the traits believed to be common among leaders (Lord, De Vader, & Alliger, 1986; Lord, Foti, & Phillips, 1982). Research has suggested that height may be a trait in the determination of perceptions of status and competence (Dannemaier & Thumin, 1964; Villimez, Eisenberg, & Carroll, 1986; Martel & Biller, 1987), and that taller height may confer advantages, particularly in the realms of salary and promotion (Melamed & Bozionelos, 1992, Judge & Cable, 2004). Presumably, relative tallness is perceived to offer some advantage, and a taller leader is expected to have that advantage.

Based on these findings, it was suggested that height is a component of the leader prototype, and that taller people reap the benefits of prototypicality in association with leadership roles (Lindeman & Sundvik, 1994). It was predicted that one individual's greater height relative to another would signify a leadership role.

H1: When the heights of Person A and Person B differ, participants will believe that the taller person is the boss.

Participant responding to the female and male images could not be statistically compared. While no formal hypothesis could be constructed, no literature-based

evidence supports a prediction that participants would respond differentially to female and male images.

Additionally, while participant gender was included as an exploratory variable, there was no evidence in the literature to suggest that male and female participants would react differentially to the taller and shorter images. Therefore, while participant gender is evaluated and discussed in the following analyses, no hypothesis was created concerning this variable. Finally, no two-way or three-way interactions were predicted.

## Method

### *Participants*

Two hundred and thirty (230) Baruch College undergraduates [129 female (56%), 100 male (44%), 1 abstained] participated in this study. They were told that they would be participating in a study about leadership. They received course credit in return for their participation.

The 81 participants who were randomly assigned to the identical dyads included 46 females (57%) who ranged in age from 18 to 43 (mean age = 24.80 years) and 35 males (43%) who ranged in age from 18 to 42 (mean age = 23.03 years) . They represented a number of different ethnicities; 27 Asian (33%), 24 White (30%), 16 Hispanic (20%), 9 African American (11%), and 5 classified themselves as “Other” (6%).

The 149 participants who were randomly assigned to the non-identical dyads included 83 females (56%), who ranged in age from 18 to 39 (mean age = 22.23 years) and 65 males (44%), who ranged in age from 18 to 40 (mean age = 21.37 years). One participant abstained from indicating gender. Of these participants, 54 were White (36%),

51 were Asian (34%), 22 were Hispanic (15%), 12 were African American (8%), and 10 classified themselves as “Other” (7%).

*Design*

This laboratory study involved two separate participant samples with different designs. For identical dyads, a 2X2 between-subjects design was used; 2(Person A height: taller vs. shorter) X 2(participant gender: female vs. male). This design was applied twice; once for identical female dyads, and once for identical male dyads.

For non-identical dyads, two separate 2X2X2 between-subjects designs were used. For non-identical female images a 2(Person A height: taller vs. shorter) X 2(Person A jacket color: grey vs. black) X 2(participant gender: female vs. male) design was used. A separate 2X2X2 between-subjects design was used for non-identical male dyads; 2(Person A height: taller vs. shorter) X 2(Person A hairstyle: hair A vs. hair B) X 2(participant gender: female vs. male).

Because the features manipulated were not comparable for the identical and non-identical dyads, results were calculated and presented separately for identical dyads and non-identical dyads. Specifically. the addition of differences in hairstyle for male images and jacket color for female images in the non-identical dyads made it impossible to compare the responses to the identical dyads with the responses to the non-identical dyads.

*Materials*

*Images.*

The materials for this study included computer generated images, in black and white, of two individuals, from the waist up, side by side, in business dress. One person was labeled "Person A," while the other was labeled "Person B" (See Appendix A).

Below the images, participants were provided with the following background information:

> These two men/women work together in the Human Resources department of a large global corporation. Their office is located in the New York Metro area. The department includes 15 people, including the Director of Human Resources and two receptionists. One of these men/women is the head of the department. The other is his/her subordinate.

Participants were randomly assigned to one of two dyad types. In the first, identical, dyad type, participants received two sets of images. The first image showed a dyad made up of two females, and the second image showed a dyad made up of two males. In both dyads, the two images were identical except for their height, with either Person A or Person B taller. In the second, non-identical, dyad type, participants also received two sets of images, one with two females and one with two males. These images were identical to each other except for their height and one other difference. For male dyads, hairstyle was varied in addition to height, while for female dyads, jacket and shirt color were varied in addition to height. These pairings permitted the examination of the impact of subtle differences in appearance, in addition to height, on participants' selection of "Boss."

Prior to the selection of these specific images, a variety of images were pre-tested in order to identify pairs that were equivalent on attractiveness, likeability, and dominance. In the pre-test, each member of the dyad looked markedly different from the other. However, it became clear that participants had a marked preference for one member of the female dyad and one member of the male dyad. As a result, the choice was made to use identical and similar images for this study.

The use of similar but "non-identical" dyads provided an opportunity to study the impact of additional, non-height physical differences on participant choices. Regardless of the dyad type, each participant received a set of images in which either A or B was taller.

*Dyad Structure.*

Because there was a concern that the presentation of images on the right or left side of the page might impact participant ratings, the materials were counterbalanced such that equal proportions of participants received a particular image height on the right and left sides of the page.

*Dependent Measures.*

Participants were asked to answer the question: "Which individual is the boss, and which is the subordinate?" by checking either "Person A is the boss" or "Person B is the boss". Participants were also asked to indicate their own gender and ethnicity.

*Procedure*

After formally agreeing to participate and providing consent, each participant received two sets of images. One set showed a female dyad, and the other a male dyad. Participants were randomly assigned to one of the two dyad types. Participants received

either two sets of identical images or two sets of similar but non-identical images. In the identical dyads, the images were identical except for height. Participants who received the non-identical dyads received an additional variable not found in the identical dyads. In the non-identical dyads, the images were identical except for height and one other variable. Hairstyle differed for male images and jacket color differed for female images.

Participants were given one set of images at a time. They were given a female dyad first and then a male dyad. Participants were asked to look at each dyad, read the background information and the question, "Which individual is the boss, and which is the subordinate?" by checking either "Person A is the boss" or "Person B is the boss."

Participants were debriefed at the end of the study.

## Results

The following results are presented in two main sections. The first section discusses participant responses to the identical dyads, and the second discusses participant responses to the non-identical dyads.

A series of analyses of variance was conducted on the dependent variable, participant choice for boss. The dependent variable was dummy coded for use in these analyses (0 = chose Person B, 1 = chose Person A). The choice was made to use ANOVAs rather than nonparametric statistics due to the greater power and interpretability of these analyses. The criterion for determining significance was $p < .05$.

### *Identical Dyads*

The following results are presented in two subsections. Because participants did not all receive the same Person A height condition for both the male and female images, it was not possible to statistically compare participant responses to the female dyads with

participant responses to the male dyads. Therefore, the results are analyzed and presented separately for identical female dyads and identical male dyads.

*Identical Female Dyads.*

A 2(Person A height: taller vs. shorter) X 2(participant gender: female vs. male) between-subjects analysis of variance was conducted on the dummy coded dependent variable, participant choice for boss. No significant 2-way interaction was observed. Additionally no significant main effect was observed for participant gender. The only significant finding was a main effect for Person A height, $F(1, 77) = 3.97$, $p = .05$. Participants were more likely to choose the taller image as boss. Overall, 64% of participants chose Person A as the boss when Person A was the taller image, and 41% chose Person A as the boss when Person A was the shorter image.

*Identical Male Dyads.*

A 2(Person A height: taller vs. shorter) X 2(participant gender: female vs. male) between-subjects analysis of variance was conducted on the dummy coded dependent variable, participant choice for boss. No significant 2-way interaction was observed. Additionally no significant main effect was observed for participant gender. The only significant finding was a main effect for Person A height, $F(1, 77) = 10.94$, $p = .001$. Participants were more likely to choose the taller image as boss. Overall, 65% of participants chose Person A as the boss when Person A was the taller image, and 30% chose Person A as the boss when Person A was the shorter image.

*Non-Identical Dyads*

The following results are presented in two subsections. Because the characteristics manipulated in the non-identical dyads were not equivalent between the

male and female images (i.e., hairstyle can not be compared with jacket color), and because participants did not all receive the same Person A height condition for both the male and female images, it was not possible to statistically compare participant responses to the female dyads with participant responses to the male dyads. Therefore, the results are analyzed and presented separately for non-identical female dyads and non-identical male dyads.

*Non-Identical Female Dyads.*

A 2(Person A height: taller vs. shorter) X 2(Person A jacket color: grey vs. black) X 2(participant gender: female vs. male) between-subjects analysis of variance was conducted on the dummy coded dependent variable, participant choice for boss. No significant 3-way or 2-way interactions were observed. Additionally, no significant main effects were found for Person A jacket color or participant gender. The only significant finding was a main effect for Person A height, $F(1, 140) = 30.32$, $p = .0001$. Participants chose the taller non-identical female image as boss more often than the shorter image. Overall, 75% of participants chose Person A as the boss when Person A was the taller image, and 33% chose Person A as the boss when Person A was the shorter image.

*Non-Identical Male Dyads.*

A 2(Person A height: taller vs. shorter) X 2(Person A hairstyle: hair A vs. hair B) X 2(participant gender: female vs. male) between-subjects analysis of variance was conducted on the dummy coded dependent variable, participant choice for boss. No statistically significant 3-way or 2-way interactions were observed. Additionally, no significant main effects were found for Person A hairstyle or participant gender. In contrast to the findings for identical female dyads, identical male dyads, and non-

identical female dyads, there was also no significant main effect for Person A height. Participants did not select one image height as the boss more often than another. Overall, 46% of participants chose Person A as the boss when Person A was the taller image, 50% chose Person A as the boss when Person A was the shorter image.

## Discussion

This study explored whether height is a characteristic of the leader prototype. This study demonstrated that participants have preferences about the heights of bosses and employees and that height is a characteristic of the leader prototype under certain circumstances.

### *Identical Dyads*

When examining identical dyads, participants identified the taller image as the boss significantly more often than they identified the shorter image as the boss. The more frequent selection of the taller image as the boss was made following the examination of both the female dyads and the male dyads. There were no significant differences in responding when participant gender was evaluated, with both female and male participants identifying the taller image as the boss.

When all other image variables were held constant, participants identified the taller image as the boss. Therefore, when examining the identical dyads, participants appeared to make the choice for boss based on height, with a preference for the taller image. This pattern of responding supported the assertion made in Hypothesis 1 that when the heights of Person A and Person B differ, participants would perceive the taller person as the boss.

Because the male and female dyads were analyzed separately, the difference between the two image genders was not statistically tested. However, a nonstatistical comparison of the findings for male and female dyads suggested that the taller option was preferred for both male and female dyads.

*Non-Identical Dyads*

The identification of the taller image as the boss was also observed when participants were asked to respond to the non-identical female dyads. The taller image was selected as the boss significantly more often than the shorter image. Results from the female non-identical dyads supported Hypothesis 1.

Although the non-identical female images differed with regard to jacket color, there was no significant difference in the selection of boss based on jacket color. Additionally, participants of both genders were significantly more likely to identify the taller non-identical female image as the boss. There was no differential responding to the non-identical female dyads when female and male participants were compared.

When non-identical male dyads were examined, neither the taller image nor the shorter image was preferentially identified as boss. The pattern of participant responses to the non-identical male dyads varied from the pattern observed in response to the identical dyads and to the non-identical female dyads. Participants did not differentially select the taller non-identical male image as boss. Therefore, the prediction made in Hypothesis 1, that a taller male would be perceived as the boss, was not supported in the non-identical male dyads. In the presence of height and another difference in the male dyads, participants did not uniformly select the taller image as boss. The insertion of an

additional difference between the images altered the pattern of responses to the male dyads.

The non-identical male images differed with regard to hairstyle. There was no significant difference in participant preferences for one hairstyle over another, indicating that participants' selection of an image as boss was not determined by hairstyle. Furthermore, there was no differential responding to the non-identical male dyads when female and male participants were compared.

The differences between the two image genders could not be statistically tested. However, a nonstatistical comparison of the data indicates that there appears to be a difference between participant responses to the female and male images in the non-identical dyads. Specifically, responding to the non-identical female dyads showed that participants more often identified the taller image as the boss. This was not the case for non-identical male dyads, in which there was no differential selection of boss based on the height of the image.

*Female versus Male Dyads*

It is of interest that participant responses to the non-identical dyads differed depending on the gender of the dyad. When examining female images, participants' responses suggest that a tall woman does fit the "boss" image and a short woman does not fit the "boss" image. The taller female image was most frequently identified as boss, even when an additional difference was present. The finding that there was no significant difference in the selection of the boss based on height in the non-identical male dyads may indicate a reduced salience of height for male images when an additional variable is present.

Alternatively, while no significant results were found for jacket color or hairstyle, the unique pattern of responding to non-identical male dyads may be due to the type of additional, non-height difference introduced. Specifically, in non-identical male dyads, hairstyle was varied, while the additional non-height difference for non-identical female dyads was clothing color. It appears that the use of different hairstyles for male dyads may have had an effect on participant responses. This possibility differs from the case of female images, in which the additional difference in clothing color did not appear to change the pattern of responding identified in the female and male identical images. It is possible that the presence of hairstyle in particular as an additional variable cancelled out any height effect that may have occurred. Although hairstyle and clothing color were counterbalanced so that each hairstyle was associated with an equivalent number of shorter or taller images, the impact of hairstyle is still difficult to discern.

It is also possible that hairstyle was viewed as a physical feature and may have had a different impact on the selection of a boss than clothing color. Clothing color may have appeared more temporary, as people are required to change their clothing on a regular basis. The differential responding to the non-identical male and the non-identical female images may be a result of the additional difference added for each dyad gender; hairstyle for men and clothing color for women, rather than a specific reaction to the heights of female dyads and male dyads. Because it is not known how hairstyle impacts evaluations of men of different heights, further studies that manipulate the same additional variable for both image genders (e.g., hairstyle for both female and male images) will clarify this effect. Such studies will help to determine whether a similar

pattern of responses would again be observed in reaction to non-identical female images as well.

Overall, height appears to affect the choices people make about leadership. This study explored whether height is a characteristic of the leader prototype. These results suggest that this is the case for identical and non-identical female images, and for identical male images. In the case of identical female and male dyads and non-identical female dyads, the taller image was most often identified to be the boss. However, further study will be required to clarify the impact of height on the choice for boss in non-identical male dyads.

A second study was proposed in order to investigate whether the disparity in responding to the non-identical male dyads and non-identical female dyads would recur in another setting in which participants were asked to rate the images on a number of work quality and relationship items. Study 1 considered whether participants would identify an image as the "boss" based on the height of the image. Study 2 further explored the effect of dyad members' relative heights on participant perceptions of the quality of each individual's work as well as the quality of the dyad members' relationship.

## Chapter 7: Study 2

The purpose of Study 2 was to determine whether the relative heights of leaders and followers impact participant evaluations of those leaders and followers. Specifically, this study considered whether the relative heights of a boss and employee would impact participant evaluations of the quality of each individual's work as well as the quality of the dyad members' relationship.

### *Hypotheses*

Previous work (Lindeman & Sundvik, 1994) and the results of Study 1 suggested that height is a component of the leader prototype, with taller individuals more likely to be perceived as bosses than their shorter counterparts. Based on the research of others and the results from Study 1, in which tallness was perceived as a characteristic for a leader, Study 2 predicted that when job performance was considered, taller leaders would be evaluated more favorably than shorter leaders. Conversely, it was predicted that a boss who was shorter than his or her subordinate would be evaluated less favorably due to a perceived failure to fulfill the prototypical leader criteria. Furthermore, members of dyads in which a boss was taller than his or her employee would be perceived as having an "ideal" height relationship, and members of dyads in which the boss was shorter than his or her employee would be perceived by participants as inconsistent with stereotypes.

Therefore, it was predicted that members of dyads whose height relationship followed the expected "boss taller" pattern would be more likely to be rated positively by participants. For dyads in which the boss was shorter than the employee, the individual dyad members would be perceived more negatively. Based on these assumptions the following hypotheses were formed:

H1: When rating the performance of bosses and employees in a dyad, participants will most strongly endorse the statements that reflect positive ratings of dyad members when the boss is taller than the employee. Participants will less strongly endorse statements that reflect positive ratings of dyad members when the boss and employee are of the same height, and participants will most weakly endorse statements that reflect positive ratings of dyad members when the boss is shorter than his or her employee.

Previous authors (Garland & Price, 1977; Green & Mitchell, 1979) have suggested that individual stereotypes regarding race and gender are likely to have a significant effect on the development of a dyadic relationship. This assertion was tested by Hill (1998), who investigated whether perceptions of a particular gender had an impact on the quality of the relationship. Results showed that dyad members who had more positive attitudes toward women as managers were more likely to develop a high quality relationship with a female leader. Stereotypes regarding the heights of bosses and employees might also impact the quality of a dyadic relationship. Furthermore, it is also possible that these stereotypes impact the perceptions of third-party observers with regard to dyad members' reactions to each other.

Perceived compatibility in leader-follower relationships may also account for the quality of exchange that develops (Dienesch & Liden, 1986). Previous studies have considered the impact of attitudinal compatibility on the quality of a leader-follower

relationship. For example, Engle and Lord (1997) performed a field study which found that perceived attitudinal similarity impacted relationship quality, and that this relationship was mediated by liking. Although no research has as yet considered height compatibility, it can be suggested that perceived compatibility in height may also affect perceptions of the relationship in a leader-follower dyad. The work on leader prototypes and the results of Study 1 suggest that people in work settings are predisposed to expect a leader to be taller than a subordinate. Members of a dyad in which the leader is taller than his or her subordinate may therefore be seen as more compatible. It was hypothesized that participants would believe that members of a dyad in which the leader is taller than the subordinate would be more likely to develop a positive work relationship than members of dyads in which the boss is shorter than his or her employee.

H2: When considering the interpersonal relationship between the leader and follower, participants will most strongly endorse statements that reflect a positive relationship between the dyad members when the boss is taller than the employee. Participants will less strongly endorse statements that reflect a positive relationship between the dyad members when the boss and employee are of the same height, and will most weakly endorse statements that reflect a positive relationship when the boss is shorter than his or her employee.

Because limited support was found for participant gender differences in Study 1, it was predicted that no participant gender differences would be observed in Study 2. Additionally, no interactions were predicted.

In Study 1, participant responses to the identical dyads provided consistently significant results across both image genders, indicating that when all other variables were held constant, height was a relevant factor in determining which of two the people was the boss. In Study 2 only non-identical dyads were used. The use of these images explored the influence of height and one additional physical difference. It was hoped that these similar but "non-identical" images would create a more realistic situation. Therefore, the use of non-identical dyads reflected a choice to focus on external validity rather than internal validity.

The choice to use the non-identical dyads also arose from a desire to determine whether the disparity in participant responses to the female and male dyads in Study 1 would recur in an additional study in which participants were asked to rate the images on a number of items. Study 1 found that participants considered height a salient variable for female and male identical dyads and for female non-identical dyads, but not for male non-identical dyads. Study 2 questioned whether height would again impact participant perceptions of female images but not male images when non-identical dyads were presented.

However, the use of only non-identical dyads in Study 2 prevented the statistical comparison of participant responses to female and male dyads. Nevertheless, results consistent with the patterns found in Study 1 would provide additional support for the disparity between participant responses to female and to male dyads.

## Method

### *Participants*

Three hundred and seventy-six Baruch College undergraduates [187 female (50%), 188 male (50%), 1 abstained] participated in this study. The students were told that they would be participating in a study about leadership. They received course credit in return for their participation.

The 188 participants who received a female dyad included 91 females (49%) who ranged in age from 18 to 37 years (mean age = 20.28 years) and 96 males (51%), who ranged in age from 18 to 36 years (mean age = 20.13 years). Sixty-five were White (35%), 56 were Asian (30%), 31 were Hispanic (17%), 17 were African American (9%), and 17 persons checked the "Other" category (9%).

The 188 participants who received a male dyad included 96 females (51%) who ranged in age from 18 to 34 (mean age = 19.82 years) and 92 males (49%), who ranged in age from 18 to 33 (mean age = 19.63 years). A number of different ethnicities were represented; 65 White (35%), 53 Asian (28%), 36 Hispanic (19%), 18 African American (10%), and 16 in the "Other" category (9%).

### *Design*

This study involved a 3x2x2 between subjects design; 3(image height: images with boss taller; images with boss and employee same height; images with boss shorter) X 2(participant gender: female vs. male) X 2(image gender: female vs. male images). Although image gender (female vs. male) was part of the design, the two image genders were not statistically compared. As in Study 1, the differential manipulation of hairstyle and jacket color for male and female dyads made it impossible to compare responding to

the two dyad genders. The non-identical male and female dyads are therefore analyzed separately.

*Materials*

*Images.*

The materials used in this study included the non-identical dyad images used in Study 1. These included computer generated images, in black and white, of two individuals, side by side, in business dress. In this study, one person was labeled "Boss," while the other was labeled "Employee" (see Appendix B).

Below the images, participants were provided with the following background information:

> These two men/women work together in the Human Resources department of a large global corporation. Their office is located in the New York Metro area. The department includes 15 people, including the Director of Human Resources and two receptionists. One of these men/women is the head of the department. The other is his/her subordinate.

*Dyad Structure.*

Each participant received one of six possible dyads. Of the six possible dyads, three dyads included a pair of male images, and three dyads included a pair of female images. For each gender pairing, one dyad presented the two individuals at the same height, one presented the boss as taller, and one presented the employee as taller.

To prevent the confounding effect of a particular image and its job title, images were counterbalanced so that each image had an equal likelihood of being labeled "Boss" or "Employee." Additionally, the materials were counterbalanced so that an equal

number of participants received a particular image on the right and left sides of the page across all three image height conditions.

*Dependent Measures.*

Participants were presented with a Dyad Evaluation Questionnaire (see Appendix B) asking them to rate the stimulus images. They were asked to indicate the extent of their agreement or disagreement with each of the statements across three categories. Ratings were completed on a scale ranging from 1-6, with 1 indicating strongly disagree and 6 indicating strongly agree. Items 1-5 (boss ratings) asked participants to rate the boss in terms of whether he/she was a good manager, likeable, and competent, whether the boss would have a successful career, and whether the participant would want to work for this boss. Items 6-10 (employee ratings) asked participants to rate the employee in terms of whether he/she was a good worker, likeable, and competent, whether the employee would have a successful career, and whether the participant would hire this employee. Items 11-14 (relationship ratings) asked participants to rate the dyad members' relationship in terms of whether the boss and employee worked well together, liked each other, whether the boss liked the employee, and whether the employee liked the boss.

Participants were also asked to provide their gender and ethnicity.

*Procedure*

After formally agreeing to participate and providing their consent, participants were randomly assigned to one of the six conditions. They were given one dyad and were asked to read the background information and then to answer the questions presented on the Dyad Evaluation Questionnaire. Participants were debriefed at the end of the study.

## Results

The results for responses to each dyad gender are presented separately. The use of non-identical dyads prevented statistical comparison based on image gender, because the different male and female dyads could not be considered equivalent. Therefore, as in Study 1, analyses were conducted separately for female dyads and male dyads.

The results are organized into two main sections. The first presents the data for female images, and the second presents the data for male images. Within each section, participant reactions to the boss rating items are presented first, participant reactions to the employee rating items are presented second, and participant reactions to the relationship rating items are presented third.

Preliminary analyses were conducted to evaluate the impact of participant gender on responses. Participant gender did not interact significantly with the image height condition. There was only one significant main effect for participant gender, $F(5, 173) = 2.44$, $p = .036$, such that for boss ratings for female images, female participants rated the boss more positively than male participants. However, because this was the only effect for participant gender, and because this finding was not informative in the context of this study, the data was collapsed over participant gender in subsequent analyses.

Cronbach's alphas were calculated to analyze the reliability of the different items in each category of the Dyad Evaluation Questionnaire (boss ratings, employee ratings, relationship ratings). The Cronbach's alphas were high for each rating category. For female images; boss rating: .88, employee rating: .89, relationship rating: .93. For male images; boss rating: .83, employee rating: .90, relationship rating: .89.

Because of the high internal consistency within each category, the individual items for each category were combined into a single composite score by calculating the average rating across the items in that category. A univariate ANOVA was conducted on each of these composite scores. If an ANOVA was significant, the analysis was followed by a post-hoc Tukey test to locate the source of the differences reflected on the F-test.

*Female Images*

*Boss Rating Items.*

A one-way ANOVA was conducted on the dependent variable, the composite boss rating, with image height selected as the independent variable. Results found a significant effect of height condition, $F(2, 185) = 3.43$, $p = .035$. Results of the post-hoc Tukey test showed that there was a marginally significant difference between the composite boss ratings for the taller boss and shorter boss conditions ($p = .052$). Specifically, participants rated the boss in female dyads with a shorter boss less positively than in female dyads with a taller boss, although there was no significant difference between the shorter and same height conditions (Table 1).

*Employee Rating Items.*

A one-way ANOVA was conducted on the dependent variable, the composite employee rating, with image height selected as the independent variable. Results found a significant effect of height condition, $F(2, 185) = 4.84$, $p = .009$. Results of the post-hoc Tukey test showed that the composite employee rating was significantly lower in the shorter boss condition as compared with the other two image height conditions, same height and boss taller ($ps < .05$). Specifically, participants' ratings of the female

employee were significantly less positive when the boss was shorter than her employee (Table 1).

*Relationship Rating Items.*

A one-way ANOVA was conducted on the dependent variable, the composite relationship rating, with image height selected as the independent variable. Results found a significant effect of height condition, $F(2, 185) = 11.57$, $p = .0001$. Results of the post-hoc Tukey test showed that the composite relationship rating was significantly lower in the shorter boss condition as compared with the other two image height conditions ($ps < .05$). Specifically, participants rated the dyad members' relationship as significantly less positive when the boss was shorter than her employee (Table 1).

*Male Images*

*Boss Rating Items.*

A one-way ANOVA was conducted on the dependent variable, the composite boss rating, with image height selected as the independent variable. Results found no significant effect of height condition, $F(2, 185) = .28$, ns. Participants did not rate any one height condition more positively than another on the boss rating category (Table 2).

*Employee Rating Items.*

A one-way ANOVA was conducted on the dependent variable, the composite employee rating, with image height selected as the independent variable. Results found no significant effect of height condition, $F(2, 185) = .72$, ns. Participants did not rate any one height condition more positively than another on the employee rating category (Table 2).

*Relationship Rating Items.*

A one-way ANOVA was conducted on the dependent variable, the composite relationship rating, with image height selected as the independent variable. Results found no significant effect of height condition, $F(2, 185) = 1.26$, ns. Participants did not rate any one height condition more positively than another on the relationship rating category (Table 2).

## Discussion

Previous studies have found that the height of an individual is related to a number of career outcomes. Taller individuals, in comparison to shorter individuals, have been found to receive higher salaries (Deck, 1971; Loh, 1993; Judge & Cable, 2004) and job performance ratings (Azen et al, 1973; Lamont & Lundstrom, 1977), and have a greater likelihood of promotion (Melamed & Bozionelos, 1992; Hensley, 1993). However, absent from the literature has been an exploration of how stereotypes regarding the relative heights of leaders and subordinates impact perceived evaluations of the dyad members.

This study uniquely explored evaluations of people in relation to those around them. Specifically, this study explored whether the relative heights of a boss and employee impact participant evaluations of both dyad members and their working relationship. It attempted to confirm and elaborate upon the findings of Study 1, which demonstrated that when viewing identical dyads and non-identical female dyads, participants identify the taller image as boss, but do not identify the taller image as boss in non-identical male dyads. Study 2 was designed to explore how height impacts participants' evaluation of the effective functioning of a boss, the effective functioning of an employee, and their working relationship.

*Female Dyads*

When examining female dyads, some support was found for Hypothesis 1, which predicted that participants would perceive the boss and employee most positively when the boss was taller than the employee and least positively when the boss was shorter than her employee. For the boss rating items, some support was found for Hypothesis 1. While the ANOVA was significant, the post hoc analysis did not reach traditional levels of significance, although there was a marginally significant difference between composite boss ratings for the boss taller and boss shorter conditions. Specifically, participants rated the boss in female dyads with a shorter boss less positively than they rated the boss in female dyads with a taller boss. This nearly significant result suggests that for female dyads, the boss is perceived more positively when she is taller than her employee.

When the employee rating items were examined, Hypothesis 1 was partially supported. Participants rated employees who were taller than their bosses least positively, as predicted in Hypothesis 1. However, employee ratings did not differ significantly between responses to the same height and boss taller conditions.

Hypothesis 2 predicted that participant perceptions of the dyad members' relationship would be most positive when the boss was taller than her employee and least positive when the boss was shorter than her employee. Participant responses to the relationship rating items for female images partially supported Hypothesis 2. Participants endorsed the relationship ratings least positively when the employee was taller than her boss, as predicted by Hypothesis 2. However, relationship ratings did not differ significantly when responses to the same height and boss taller conditions were compared.

The present findings demonstrated that for female dyads, the employee is perceived more positively when the boss is the same height or taller than her employee. These results appear contrary to the findings of previous studies, which found that increasing employee height predicts job approval ratings (Lamont & Lundstrom, 1977; Eisenberg, Roth, Bryniarski, & Murray, 1984; Villimez, Eisenberg, & Carroll, 1986; Cann, 1990; Hensley, 1993; Judge & Cable, 2004). For example, Lamont and Lundstrom's 1977 study found a significant, positive correlation between employee height and evaluation of the employee as measured by a 63-item form that measured various aspects of work performance. However, it is unknown in what context these evaluators are considering their employees. For example, it is unclear whether the employee being evaluated is in a managerial or subordinate role. This lack of context in which the person is being evaluated makes it difficult to find parallels between previous studies and the current results. The present study provides specific contextual information with a demonstration of the impact of height on separate evaluations of bosses and employees in their roles, and boss-employee relationships.

Additionally, previous research has not evaluated the employee and boss in relation to each other. In the previous studies reported above, employees were evaluated on their own. While the typical perspective considers the effect of a particular employee's height on others' perceptions of that employee, the present research considered how relative boss-employee height impacts perceptions of an employee.

The finding that employees who were taller than their bosses were perceived least positively by participants as compared to employees who were shorter or the same height as their bosses also raises the possibility that an employee who is taller than her boss may

not fit the subordinate role, and may be perceived more negatively than an employee who is shorter than the leader. It is possible that as an employee's height increases relative to a boss's height, the employee may become associated with the same "leader-like" characteristics attributed to a taller boss, and may therefore be perceived as less typical of a successful subordinate. To explore this possibility, future studies should further evaluate perceptions of an employee based on his or her height relative to a boss.

In the relationship rating category for female dyads, the results showed that dyads with a shorter boss were perceived as having a less positive relationship than dyads with a boss who was the same height or taller than her employee. If a boss is stereotypically expected to be taller than an employee, when height expectations are not met, participants may view the two individuals as incompatible based on their height, and may perceive them as having a less positive relationship. Further research will be required to elaborate upon the potential impact of height in determining the perceived compatibility of a particular boss and employee. Additionally, future studies should investigate the influence of participant expectations about height compatibility on their perceptions of the relationship between dyad members.

Overall, the finding that female dyads with a shorter boss received lower ratings than same height or boss taller dyads across the three rating categories provides support for Jackson and Ervin's (1992) suggestion that shortness is a liability. There were no significant differences between the same height and boss taller image height conditions. This finding is opposed to the common assertion that "taller is better".

*Male Dyads*

When examining male dyads, Hypothesis 1 was not supported. Hypothesis 1 predicted that participants would perceive the boss and employee most positively when the boss was taller than his employee and least positively when the boss was shorter than his employee. However, no differences were found between participant responses to the three image height conditions in either the boss rating or employee rating categories.

When considering the interpersonal relationship between the leader and follower, Hypothesis 2 predicted that participant perceptions of the dyad members' relationship would be most positive when the boss was taller than his employee and least positive when the boss was shorter than his employee. Hypothesis 2 was not supported in the case of male dyads. No significant difference was found between participant responses to the three image height conditions in the relationship rating category.

*Differences across Image Genders*

Since the female and male images were not comparable, participant responses to the two image genders could not be statistically compared. However, a review of the findings for both image genders indicates that there were differences in the pattern of responding to the female and male dyads. In the analyses of responses to the female dyads, participants perceived dyads with bosses who were shorter than their employees least positively. In contrast, the analyses of responses to male dyads showed no significant differences in participant responses to the different rating categories. The results of Study 2 mirror the findings of Study 1 for non-identical dyads, which found that the taller female image was more often identified as the boss, while this pattern of responding was not found in response to the male images.

The pronounced difference between participant responses to female dyads and male dyads is challenging. The pressing question: are the differences in response to the dyads a result of unique features manipulated in this study (e.g., hairstyle and jacket color), or do participants respond differentially to images of female bosses and male bosses depending on the relative height of their employees?

As suggested in Study 1, it may be that the pattern of responding to female and male dyads may be due to the type of difference provided. Specifically, in female dyads clothing color varied, while in male dyads, hairstyle varied. It is possible that hairstyle may have been perceived as a physical feature of the body and may be seen as permanent, and may have had a unique impact on perception of the image that clothing color did not. Although one hairstyle was not preferred over another, it is possible that the difference in clothing color was not salient in affecting participant perceptions of female images while the presence of a difference in hairstyle in the male dyads overshadowed the height manipulation. The difference in responding to the female and male images may have been a result of the disparity in these differences rather than a specific reaction to female dyads and male dyads. Further studies should include variables which receive a similar manipulation for both genders in addition to the height manipulation. Such studies would clarify the specific impact of hairstyle and clothing on the evaluation of bosses, employees and their relationship under varying image height conditions.

Alternatively, height may be relevant when assessing female bosses and employees but not when assessing male bosses and employees. People may have less experience with female leaders of varying height and might rely on salient cues to

determine authority and status. There are significantly fewer models of female leadership in the business world. USA Today (January 27, 2003) reported that in Fortune 500 companies there were only 6 female CEOs, and that 393 of the Fortune 500 companies had no women among their top five executives.

In this study, participants may have relied on height to evaluate leadership among the female images. However, since male leaders are more common, participants may have had more exposure to male bosses of varying heights, and may be aware of the various factors that are responsible for the qualities of a male boss. Therefore, height may be a relevant characteristic in evaluating female bosses and employees where other valuable cues are not available, but it becomes less relevant when evaluating male bosses and employees for which other information is available. Future research may better clarify this possibility by evaluating the responses of participants who have worked with varying numbers of female bosses. Those participants with greater exposure to female bosses may be less inclined to rely on height to evaluate women bosses, employees, and their relationships.

*Height and Masculinity.*

In this study, height may have had a significant effect on the perceptions of female images because height may act as a cue for masculinity; a characteristic which has been linked with perceptions of leader effectiveness. An unpublished study by the National Center for Health Statistics (1988) reported that the average height for men in the United States over age 20 was approximately 69 inches, while the average height for women was approximately 64 inches. There is, therefore, a 5 inch disparity between the average heights of men and women. Because men tend to be taller than women, height

may be viewed as a male characteristic. Therefore, it is possible that greater height acts as a cue for greater masculinity. If greater height implies masculinity, then the taller female in a pair may have been perceived as more masculine than the shorter female. Height may therefore influence participants' perceptions of the images' respective masculinity when the images are both female. This suggestion is in accordance with the findings of Elman (1977), who found that short target individuals were perceived as more feminine than taller target individuals.

Being male and masculinity have been more closely associated with leadership qualities than being female and femininity. Schein asked male (1973) and female (1975) middle managers to rate women in general, men in general, and successful middle managers on a number of descriptive items. In these studies, Schein tested whether a connection existed between perceptions of successful middle managers and perceptions of men or women in general. Results of these studies found that the characteristics associated with successful middle managers were more likely to be also perceived to be held by men than to be held by women. Similarly, Dennis and Kunkel (2004) asked undergraduates to complete measures of power, leadership, and gender role, and found that male participants were rated higher on work competence, activity/potency, emotional stability, independence, and hostility. The authors suggested that men, more than women, are perceived as being equipped to be successful leaders. Additionally, Hackman, Hills, Paterson, and Furniss (1993) found that masculinity was perceived as a characteristic associated with perceived effectiveness on the Bass Leadership Questionnaire in both female and male leaders, and that female subordinates perceived leaders as less effective when displaying feminine gender-role characteristics. These

studies provide evidence to support the suggestion that being male or having male characteristics is more closely associated with perceptions of leadership than being female or having female characteristics.

The issues raised by the findings of the present research offer opportunities for future research. One future study could investigate the extent to which relative height impacts participant perceptions of an image's masculinity and femininity. Such a study would clarify whether the responses to a boss and an employee differ based on the perceived masculinity and femininity of each image, and whether differences in perceived masculinity and femininity exist similarly for female and male images in same-gender dyads.

*Additional Suggestions for Further Research*

This study considered participant perceptions of images of bosses and employees. However, in order to successfully predict the implications of these results, it will be necessary to determine whether these perceptions translate into actual work situations. Future studies should further assess how individual performance and boss-employee relationships function in the workplace when a boss and employee differ in height. For example, they could examine whether there are more confrontations, competition, and hostility when a boss is shorter than an employee. This line of investigation would help to clarify the impact of relative height on perceptions of workplace functioning.

Finally, additional studies should be conducted in order to explore the circumstances by which height impacts participants' responses to female versus male images. There appears to be a different standard for female images than for male images, and that difference warrants further investigation.

## Conclusion

Overall, for female images, ratings of employees and ratings of the dyad members' relationship were significantly impacted by image height, with the shorter-boss dyads receiving lower ratings on the Dyad Evaluation Questionnaire. This was not the case for male images, where no significant effect of height was found across the various relationship categories.

It appears that the relative heights of a boss and employee impact some participant evaluations concerning the dyad members. These findings suggest that people may rely on height stereotypes when evaluating dyad members and their relationship.

The possibility that these evaluations are based on existing height stereotypes about females and males in leader and subordinate roles raises a number of concerns. The implication is that persons in hiring capacities may inadvertently consider the height of an individual in relation to a prospective boss or employee with whom he or she will be working.

An employee's performance appraisals may also be affected. Appraisals which involve the evaluation of employees and bosses in relation to each other may be affected by their relative heights. This may be of particular concern when the situation involves corporate performance appraisal systems that request a third party (e.g., colleague, client, manager) to provide the evaluations of an individual. These results suggest that an observer's evaluations may be impacted by the disparity in the relative heights of a boss and employee. Regardless of whether this disparity works in their favor, such as in the case of a female boss who is taller than her employee, this effect is potentially

discriminatory, and would be likely to lower the validity of measures of employee and boss performance.

The possibility that role assignments might be made based on variables other than merit or skill raises an additional concern for those striving to ensure unbiased employment decisions. For example, these types of biased decisions could be made if Human Resources professionals, without intention, consider the height of a potential hire before assigning him or her to a particular manager.

This study has provided valuable evidence that the relative heights of a boss and employee can affect participant evaluations of each individual as well as participant evaluations of the quality of their working relationship.

## Chapter 8: Discussion and Conclusion

*Contributions of this Research*

The above studies contribute to the body of literature on height by providing new evidence that height is a component of the leader prototype. The initial hypotheses predicted that taller individuals would be more likely to be identified as a boss. The hypotheses also predicted that members of dyads with taller bosses would receive higher ratings and be perceived as having a more positive relationship with each other than members of dyads with a boss who was shorter than his or her subordinate. The results partially confirmed these expectations and illustrated a number of patterns that raise new questions for further research.

These studies also found support for the notion that the relative heights of dyad members impact participant perceptions. Specifically, while previous research has highlighted the benefits reaped by tall individuals (Melamed & Bozionelos, 1992; Judge & Cable, 2004), the current studies have illustrated that observer perceptions are also influenced by the comparison of that individual's height to the heights of others. For example, in Study 1 participants selected the image that was taller in relation to the other image, with no information indicating the specific heights of the two images. As such, it is possible that even given two short individuals, the one who is relatively taller will be perceived as the boss. Similarly, these results also suggest that the specific height of a leader is irrelevant as long as this boss is taller than his or her subordinates.

The evidence provided by these studies suggests that a person's height impacts a perceiver's reactions to him or her in a leadership context. In particular, the results of Study 1 demonstrated that for identical and non-identical female images, the taller

individual in a dyad was more likely to be perceived as the boss, or the shorter person was perceived not to be the boss. Study 2 extends these findings for female images. In female boss-subordinate dyads, members were perceived more positively when the boss was taller than her subordinate. The results of Study 2 make a contribution to the work regarding height and leadership by suggesting that, in some cases, members of dyads who meet observer prototypes regarding the heights of leaders and followers are likely to be rated more positively in their respective roles in terms of competence, potential success, and likeability than members of dyads in which the leader is shorter than his or her subordinates.

Another major contribution of this work involves the opening of a new body of research concerning the impact of height differences on the interpersonal relationships between a boss and employee. Study 2 predicted that the relative heights of a boss-employee dyad would impact participants' perceptions of the quality of the dyad's relationship such that taller-boss dyads would be perceived as having the most positive relationship. The results showed that the relative heights of the boss-employee dyad influenced the responses of participants to female images. Specifically, relationships were perceived least positively when the boss was shorter than her employee.

*Differential Responding to the Dyad Genders*

This research also raises a critical question: Are women and men evaluated differently when there are disparities in height among the members of the dyad? In response to dyads composed of women, Jackson and Ervin's (1992) "shorter as a liability" rule for bosses appears to have applied. Height appears to play a role in the determination of boss and the evaluation of the individual dyad members and their

relationship when women were assessed. Female images that were taller in relation to another image were more likely to be viewed as bosses. Female employees who were taller than their boss were perceived most negatively, and female dyads with a shorter boss were perceived as having a less positive relationship than female dyads with a boss who was taller or the same height as her employee.

Height seems to play a different role when males are assessed. In Study 1, with all variables held constant, the taller man was typically identified as the boss. However, when male images were not identical, height did not seem to play a role in the identification of the boss. Similarly, when male dyads were considered in Study 2, relative height did not impact the evaluations of the boss, the employee, or their relationship.

The apparent differential responding to the male and female images is worthy of exploration. For example, the finding of Study 2 that a shorter boss height relative to employee height predicted a less positive evaluation of the female dyads but not the male dyads is contrary to a number of previous research outcomes (Villimez et al, 1986; Judge & Cable, 2004). Villimez et al (1986) found that taller male children were rated by teachers as more competent, although these results were not found for the ratings of female children. Similarly, Judge and Cable (2004) found that height was somewhat more strongly related to success in terms of income and attainment of leadership roles for men than for women, although this difference was not significant.

However, when considering the discrepancy between these previous findings and those of the current studies, it is important to consider the differences in their respective methods. The Villimez et al (1986) and Judge and Cable (2004) studies focused on the

impact of a single individual's height in terms of his or her perceived tallness or shortness, while the current study considered the impact of an individual's height specifically in relation to his or her boss or employee. It is possible that perceptions operate differently when evaluating the height of an individual than when considering someone in relation to another person of a different height. This suggestion is supported by previous research that has described a context effect wherein the characteristics of others impact the performance evaluation of a particular ratee. For example, Kraiger and Ford (1985) conducted a meta-analysis which found that bias in evaluations of African American employees varied based on the racial composition of their work groups. Study 2 includes a similar situation in which raters may have evaluated each dyad member in relation to the other available image. As such, it is not surprising that these results differ from those of previous studies which focused only on evaluations of a categorically "tall" or "short" individual.

One possible explanation for the differences between the two image genders in the case of non-identical dyads involves the potential interplay between height and other traits or features. Findings for the identical images seem to highlight a preference for viewing a taller image more favorably. The choice to use non-identical dyads in these studies in addition to identical images arose from the question of whether the presence of other features would reduce the focus on height. The results from studies 1 and 2 suggest that additional features may in fact moderate the demand to make decisions that favor a taller image. While the addition of a difference in jacket color for non-identical female dyads did not reduce participants' tendency to select or positively evaluate the taller individual, the addition of hairstyle in the non-identical male dyads may have reduced the

impact of height on participants' choices. However, it is as yet unclear which features have an effect and whether this effect differs across image genders. Future research must more fully investigate this possibility.

Additional studies will shed light on the nature of the differential responding to the female and male dyads. They will provide clarification for the disparity in responding to the two image genders. Specifically, future studies will need to determine whether participant responses to the male and female images in these two studies were a function of the gender of the dyad or if responding was dependent on the specific additional manipulated variables; hairstyle and jacket color.

Furthermore, future research should explore the possible mediating effects that drive these participant choices. Judge and Cable (2004) explored two such factors in their paper; self esteem and social esteem. The authors tested a theoretical model which proposed a relationship between height and success, with self esteem and social esteem as factors mediating the relationship between height and success. They suggest that being taller does not simply cause one to be more successful. Rather, being tall makes one more likely to have a positive self-image and to be viewed more positively by others. These factors in turn cause the taller person to be more successful in the long term.

Additionally, the results of Study 2 raise the possibility that the perception of height connotes an individual's masculinity or femininity, and that these factors may subsequently impact perceptions of bosses, employees, and their relationships. Future research might directly explore the possible impact of relative height on participant perceptions of an image's masculinity and femininity.

*Actual Versus Perceived Effects*

These results may also present a potential implication from an attributional perspective. While these studies considered only participants' perceptions of the dyad members and offer no information about actual behavior, it is well established that attribution biases can have a tangible impact on an individual through the presence of confirmation bias or a self-fulfilling prophesy. Specifically, if members of dyads with taller leaders are expected to be more effective, they may actually become more effective in the long term. This assertion is supported by Judge and Cable's (2004) theoretical model, which links height to success through the mediating factors of self-esteem and social esteem. The authors note that people who are held in esteem may be more likely to develop trusting relationships or negotiate effectively, and "thus, an individual's social power and stature may create a self-fulfilling process: esteemed people are more able to deliver job results which make them even more esteemed" (p. 430). Therefore, if there is a predisposition to view taller people as more attractive, dominant, or powerful, then people may react more positively to taller people, making them more likely to achieve career success.

The work on stereotype threat also supports the possibility that the existence of a commonly held stereotype can produce an actual difference in the long run. For example, Johns, Schmader, and Martens (2005) explored the impact of stereotype threat on the test scores of male and female participants. They found that while women performed worse than men when the test was called a math test, as expected given the negative stereotype of women as "bad at math", calling the test a judgment test instead or informing participants about stereotype threat and its effect significantly diminished this difference.

A variety of authors have found evidence of both actual (Eisenberg et al, 1984, Humphreys et al, 1985) and perceived (Villimez et al, 1986, Montepare, 1995) impacts of height. However, the contribution of height to actual versus perceived outcomes has not received particular attention. As a result, there is a need for future research to determine whether height does actually have a tangible impact beyond an observer's perceptions, and whether this impact is direct or involves other mediating factors. For example, it is possible to investigate whether dyads with shorter leaders tend to prove ineffective in the long term.

Additionally, future studies could explore the question of whether taller people are inherently more successful, whether being tall is an advantaged state in which tall people respond to the advantage and behave in a way that society expects of tall people or whether the success of tall people results from the positive reinforcement to a tall individual over the course of their lifetime. Specifically, the questions to be asked include: are taller people actually more intelligent and capable from a young age, or are taller people more likely to succeed because other people expect them to? Do taller people receive feedback and encouragement that shorter people do not?

A potential study to explore these questions could involve the longitudinal study of cohorts of young children of the same height ranges measured initially and then over their lifetimes. After determining a baseline of qualities such as leadership qualities, personality, intelligence, masculinity, power, and dominance for children of the same height at a young age, it would be possible to reassess these characteristics on a periodic basis to determine if they wax or wane based on the child's changing height relative to other people. This line of research would make it possible to determine whether as

persons become taller in reference to their peers, they become more likely to display leadership qualities. It would be interesting to assess how observers of different types including teachers and peers evaluate the leadership qualities of students and to assess whether height plays a role in that assessment. Similarly, it would be of interest to assess whether leadership qualities persist in young leaders who do not grow as tall as their peers.

*Limitations*

*Inability to Compare Gender Statistically.*

There were a number of limitations in the present research which require attention in future studies. A limitation associated with the designs of Studies 1 and 2 involves the inability to statistically compare participant responses to the two image genders. Furthermore, the choice to use only non-identical dyads, in Study 2 prohibited the prevented a complete understanding of the nature of participant responses to the two dyads. In order to draw a complete parallel to the results of Study 1 and to provide support for the differences in participants' responses to the two image genders, identical dyads must be used in a future study.

The use of identical images in a future replication of Study 2 would also provide additional support for the assertion made in the discussion of Study 1, that when all else is equivalent, as in the identical images, height is a relevant variable, but that when an additional variable is added, such as hairstyle or clothing color, the situation becomes more complex and differing responses to images of the two genders may arise.

*External Validity.*

The choice to use identical or extremely similar images may have diminished external validity by controlling for too many variables. Because in situations outside the laboratory it is rarely possible to compare two persons who look identical except for their height, it is possible that the findings of these studies may not generalize to more realistic settings.

In order to relieve the doubt raised by these limitations, the external validity of these findings can be tested in a number of ways. First, the methods described above could be replicated while switching the variables that were used in Study 2 and manipulating hairstyle for women and clothing color for men. This would determine whether the differences between the findings for male and female images described above were truly due the images' gender, or rather, to the specific variables associated with those images. For example, future research might find that a taller male image would be significantly more likely to be selected as the boss when clothing color is manipulated, thereby demonstrating that height is a relevant factor for both female and male images, but that it may be less relevant than other factors in impacting observer perceptions.

Similarly, different variables should also be included in further studies. Alternate physical characteristics (e.g., eyeglasses, prominent facial features) could by applied by altering the images, and additional personal characteristics (e.g., ability, personality, experience, tenure) could be described in the background information. Findings of these studies would enhance the studies' generalizability by illustrating that height remains relevant in the presence of other characteristics.

Furthermore, the generalizability of findings could be improved in future studies by studying the impact of height in the workplace by obtaining information from leaders and followers directly rather than from an outside observer. For example, future researchers may wish to consider the perceptions of followers who are shorter or taller than their bosses and leaders who are shorter or taller than their employees. Additionally, future work could focus on determining whether people who have been in the workforce, and who have experienced a great variety of boss-employee relationships, respond to the dyads in a similar fashion to those shown by the student participants in this study.

*Limited Background Information.*

Another potential issue involves the limited amount of information available for participants to use in making judgments. Aside from the image height and, in some cases, one additional difference, no information was provided to help participants differentiate one image from the next. The fact that height was the only clear-cut factor, particularly in the case of identical dyads, leaves the situation unclear, because participants may have felt directed to look at height, and because no other characteristics were available to them. Therefore, it is possible that they chose the taller image because it was the only visible difference, and because they expected that this is what the experimenter wanted them to do. In future studies, additional, equivalent differences or characteristics should be provided in the background data which would help to additionally mask the visibility of the height variable and offer participants more substantial information on which participants can base their choice. For example, the addition of more detailed profiles of the two images could direct participants' focus away from the height difference, allowing

participants to focus on other features where the experimenter's expectations are less clear.

However, even the possibility that participants select the taller image due to a perceived demand is fascinating in itself. Why should participants make the assumption that the experimenter expects them to choose the taller individual? Why is it that the demand is not for the shorter individual? The potential cultural or genetic predisposition to place greater value on tallness raises many questions regarding the creation of the particular direction of the demand. One line of research might replicate this study in other cultural settings to determine the impact of society of upbringing on choice of individual based on height. The participants in this study were a sample of undergraduate students in a university on the East Coast of the United States. Would these results be corroborated with an aboriginal or Eskimo sample? Cross-cultural empirical research might provide some answers.

Another question raised by this research asks whether tallness is representative of other qualities valued by society. Specifically, if height is symbolic of other important characteristics such a power, leadership, or attractiveness, participants may be more likely to select the taller individual due the perceived connection between a person's height and these desirable characteristics. If this line of reasoning is supported through research, further exploration might attempt to determine how greater height became associated with power, leadership and attractiveness.

*Dyad Gender.*

The present studies did not consider the effect of height on mixed-gender dyads. These studies represent an initial attempt at learning whether participant responses are

similar when examining female and male dyads. Therefore, the images were limited to same-gender dyads with the intention that they would be less complicated and easier to study as a first step. However, because real leaders and followers are not universally gender-congruent, it will be critical for further investigations to consider mixed-gender dyads.

*Additional Suggestions for Future Research*

A potential direction for further research might extend the field of study outside the realm of third party perceptions and focus on exploring the impact that height has on the dynamics between members of boss-employee dyads. Research of this type could solicit data directly from dyad members about their experience of being a member of a boss-employee dyad in which a height disparity exists.

Another possibility for future study relates to the background information provided about the two individuals. In these two studies, participants were told that the images were Human Resources employees. However, it is also possible that other contexts exist in which height becomes a more relevant variable. This possibility was supported by Judge and Cable's (2004) finding that the relationship between height and salary was stronger in some occupations than in others.

Future research would also benefit from the consideration of differences in relative height when the dyad members' absolute height is known. Specifically, this will help to determine whether a taller leader will still benefit when both individuals are considered short (e.g., boss who is 5'3" versus an employee who is 4'10'').

The images used in these studies presented the two images from the waist up. As a result, the intended height difference of the images may have been viewed as two

images with one in the foreground and one in the background. Future studies may benefit from the inclusion of full-body images to give participants a clearer perspective of the difference as due to height rather than distance. Another option would be to ask participants whether one of the images is perceived as being in the foreground.

Future research may also benefit from a consideration of possible cross-cultural effects. Given the presence of different leader prototypes across countries (Gerstner & Day, 1994) it is possible that participants of different ethnicities would react differently to the images used in these studies.

*Strengths*

Overall, the two studies described above display a number of strengths. First, they directly examined participant reactions to bosses and employees of varying height in an experimental setting. This experimental research added to the largely correlation-based literature on the topic of height in the workplace by using more rigorous controls and random assignment of participants to conditions that help to eliminate some alternative hypotheses arising from inherent differences between the stimuli and the participant groups. This research provides evidence of a causal relationship between height and participant decisions in identifying and evaluating leaders and followers. Second, these studies took a rigorous approach by attempting to control for a large number of variables in order to assess the specific contribution of height to boss selection and dyad evaluation. Third, these studies added a second variable (hairstyle for men and jacket color for women) to determine whether participant evaluations vary under conditions in which height and an additional difference is present.

*Implications*

These findings suggest a number of possible implications for the workplace. The finding that a taller individual is more likely to be perceived as a leader than a shorter individual raises many questions about the impact of height on job selection decisions and promotions. If the taller of two peers is more likely to be perceived as a leader, he or she may have a greater possibility of being selected to move into a managerial role. Additionally, the suggestion that members of dyads with a shorter leader are perceived less favorably may negatively impact performance evaluations of employees who are taller than their bosses. Similarly, if relative height impacts the evaluation of the quality of a boss-employee relationship, that height differential may affect a wide range of workplace decision making, from the selection of dyad members to perceptions of their success in these roles.

These issues may be particularly relevant for women for at least two reasons. First, women may be at a greater disadvantage as they are generally shorter than men. Additionally, according to the findings of Study 2, when a woman is taller than her boss she may be perceived as less effective and less engaged in a productive work relationship.

*Conclusion*

In the conclusion of their 2004 article, Judge and Cable discussed the relevance of research on the topic of height, highlighting the finding that a person's height is related to the amount of money they earn. Judge and Cable called for further empirical study of height, noting that despite the "haphazard treatment of the height-workplace success

topic" by previous researchers, "it is important to understand how and why physical height affects people's success in the workplace."

The results of these two studies provide further support for Judge and Cable's (2004) assertion that research on height is an important and relevant topic worthy of continued investigation. The findings of Study 1 and Study 2 bring height into the context of leadership, and demonstrate that it has a significant effect on participant perceptions of leaders and followers.

The wealth of anecdotal information about height is enormous. A basic internet search for the word "height" yields approximately 33,700,000 results regarding a variety of topics related to height. This research represents a strong step in gaining an empirical and theoretical understanding of height and its impact on the workplace.

Table 1

*Means for Female Image Ratings*

| Rating Category | Boss Taller | Same Height | Boss Shorter |
|---|---|---|---|
| Composite boss rating | 4.22 | 4.20 | 3.84 |
| Composite employee rating | 4.28 | 4.24 | 3.84 |
| Composite relationship rating | 4.13 | 3.75 | 3.17 |

Table 2

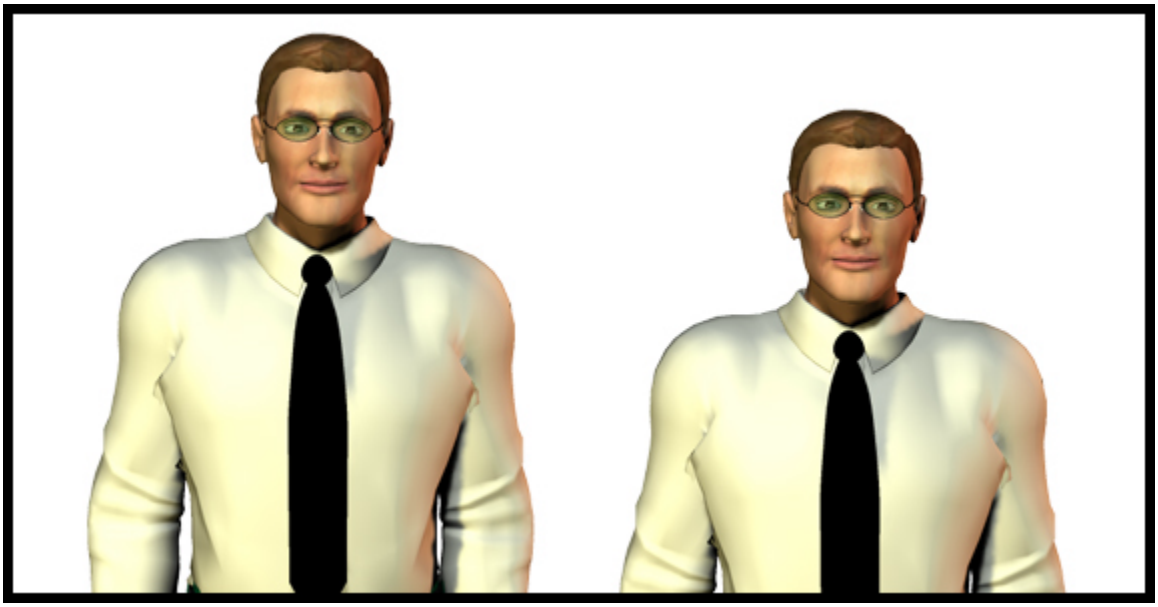
*Means for Male Image Ratings*

| Rating Category | Boss Taller | Same Height | Boss Shorter |
|---|---|---|---|
| Composite boss rating | 3.84 | 3.77 | 3.74 |
| Composite employee rating | 3.87 | 3.93 | 4.07 |
| Composite relationship rating | 3.52 | 3.81 | 3.65 |

Appendix A: Study 1 Materials

*Identical Images*

Please note: Additional counterbalanced images were also presented, with Person B as the taller image.



**PERSON A** **PERSON B**

These two men work together in the Human Resources department of a large global corporation. Their office is located in the New York Metro area. The department includes 15 people, including the Director of Human Resources and two receptionists. One of these men is the head of the department. The other is his subordinate.

**Which individual is the boss, and which is the subordinate? (Please check one).**

☐ **Person A is the boss** ☐ **Person B is the boss**

---

Your gender (Check one): ☐ Male ☐ Female

Your age: _____

Ethnicity: (Check one): ☐ White ☐ African-American ☐ Hispanic
☐ Asian ☐ Other_____

**PERSON A** **PERSON B**

These two women work together in the Human Resources department of a large global corporation. Their office is located in the New York Metro area. The department includes 15 people, including the Director of Human Resources and two receptionists. One of these women is the head of the department. The other is her subordinate.

**Which individual is the boss, and which is the subordinate? (Please check one).**

☐ **Person A is the boss** ☐ **Person B is the boss**

---

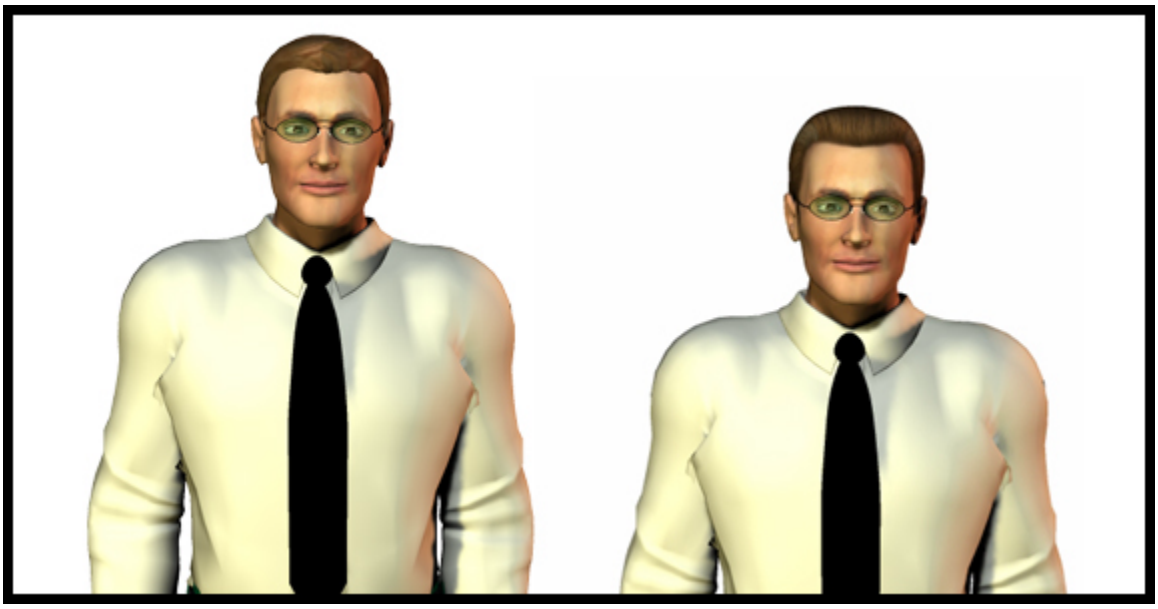
Your gender (Check one): ☐ Male ☐ Female

Your age: _____

Ethnicity: (Check one): ☐ White ☐ African-American ☐ Hispanic
☐ Asian ☐ Other_____

*Non-Identical Images*

Please note: Additional counterbalanced images were also presented, with Person B as the taller image. Additionally, both hairstyles and jacket colors were presented equally as Person A and B.



**PERSON A** **PERSON B**

These two men work together in the Human Resources department of a large global corporation. Their office is located in the New York Metro area. The department includes 15 people, including the Director of Human Resources and two receptionists. One of these men is the head of the department. The other is his subordinate.

**Which individual is the boss, and which is the subordinate? (Please check one).**

☐ **Person A is the boss** ☐ **Person B is the boss**

---

Your gender (Check one): ☐ Male ☐ Female

Your age: _____

Ethnicity: (Check one): ☐ White ☐ African-American ☐ Hispanic
☐ Asian ☐ Other_____

**PERSON A** **PERSON B**

These two women work together in the Human Resources department of a large global corporation. Their office is located in the New York Metro area. The department includes 15 people, including the Director of Human Resources and two receptionists. One of these women is the head of the department. The other is her subordinate.

**Which individual is the boss, and which is the subordinate? (Please check one).**

☐ **Person A is the boss** ☐ **Person B is the boss**

---

Your gender (Check one): ☐ Male ☐ Female

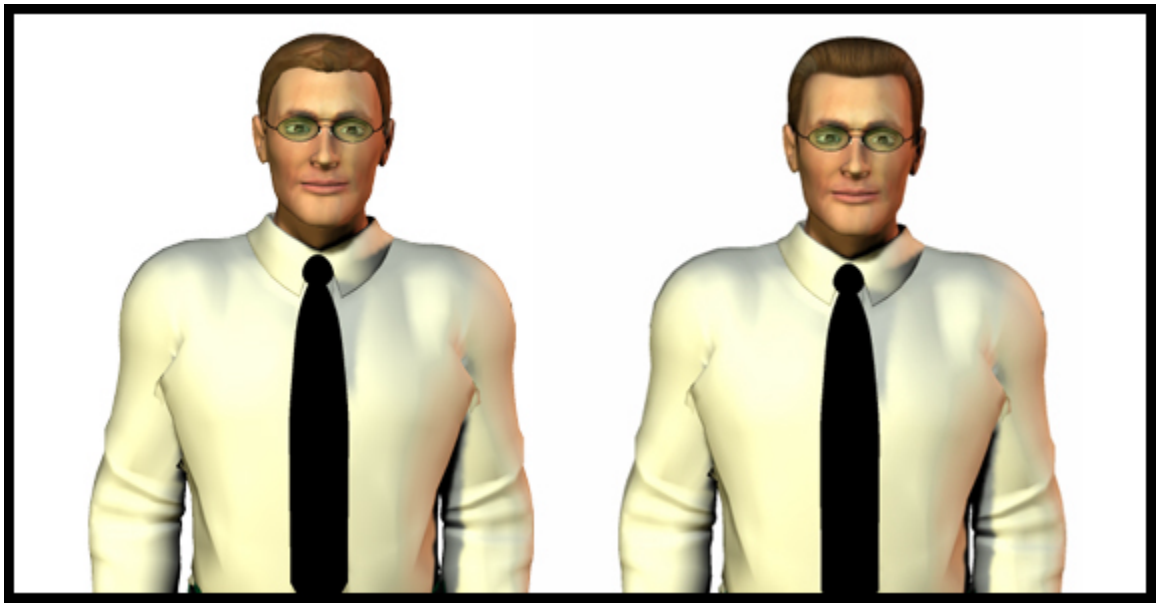
Your age: _____

Ethnicity: (Check one): ☐ White ☐ African-American ☐ Hispanic
☐ Asian ☐ Other_____

Appendix B: Study 2 Materials

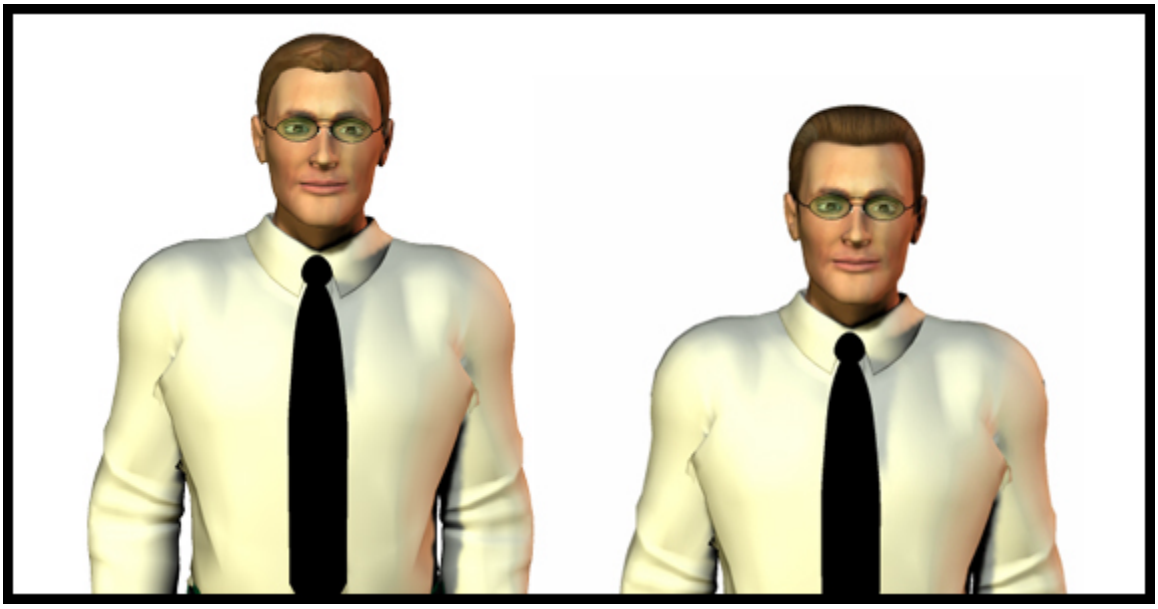
*Sample Images*

Please note: Additional counterbalanced images were also presented, with the Boss and Employee in the opposite positions. Additionally, both hairstyles and jacket colors were presented equally as the Boss and Employee.



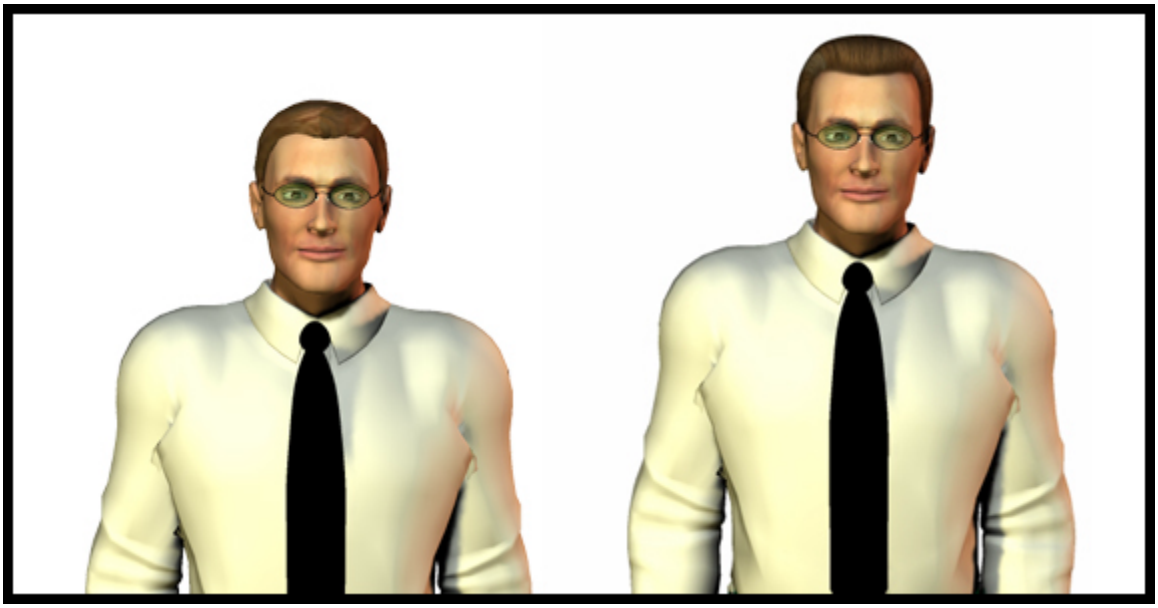
**BOSS** **EMPLOYEE**

These two men work together in the Human Resources department of a large global corporation. Their office is located in the New York Metro area. The department includes 15 people, including the Director of Human Resources and two receptionists. One of these men is the head of the department. The other is his subordinate.



**BOSS** **EMPLOYEE**

These two men work together in the Human Resources department of a large global corporation. Their office is located in the New York Metro area. The department includes 15 people, including the Director of Human Resources and two receptionists. One of these men is the head of the department. The other is his subordinate.



**BOSS** **EMPLOYEE**

These two men work together in the Human Resources department of a large global corporation. Their office is located in the New York Metro area. The department includes 15 people, including the Director of Human Resources and two receptionists. One of these men is the head of the department. The other is his subordinate.

**BOSS** **EMPLOYEE**

These two women work together in the Human Resources department of a large global corporation. Their office is located in the New York Metro area. The department includes 15 people, including the Director of Human Resources and two receptionists. One of these women is the head of the department. The other is her subordinate.

**BOSS** **EMPLOYEE**

These two women work together in the Human Resources department of a large global corporation. Their office is located in the New York Metro area. The department includes 15 people, including the Director of Human Resources and two receptionists. One of these women is the head of the department. The other is her subordinate.

**BOSS** **EMPLOYEE**

These two women work together in the Human Resources department of a large global corporation. Their office is located in the New York Metro area. The department includes 15 people, including the Director of Human Resources and two receptionists. One of these women is the head of the department. The other is her subordinate.

**Indicate the extent to which you agree or disagree with each of the following statements. Use a scale from 1 to 6, with 1 meaning that you strongly disagree, and 6 that you strongly agree. Circle the appropriate number.**

**This boss:**

| | Strongly disagree | | | | | Strongly agree |
|---|---|---|---|---|---|---|
| Is a good manager | 1 | 2 | 3 | 4 | 5 | 6 |
| Is likeable | 1 | 2 | 3 | 4 | 5 | 6 |
| Is competent | 1 | 2 | 3 | 4 | 5 | 6 |
| Will have a successful career | 1 | 2 | 3 | 4 | 5 | 6 |
| I would want to work for this boss | 1 | 2 | 3 | 4 | 5 | 6 |

**This employee:**

| | Strongly disagree | | | | | Strongly agree |
|---|---|---|---|---|---|---|
| Is a good worker | 1 | 2 | 3 | 4 | 5 | 6 |
| Is likeable | 1 | 2 | 3 | 4 | 5 | 6 |
| Is competent | 1 | 2 | 3 | 4 | 5 | 6 |
| Will have a successful career | 1 | 2 | 3 | 4 | 5 | 6 |
| I would hire this employee | 1 | 2 | 3 | 4 | 5 | 6 |

**These two people:**

| | Strongly disagree | | | | | Strongly agree |
|---|---|---|---|---|---|---|
| Work well together | 1 | 2 | 3 | 4 | 5 | 6 |
| Like each other | 1 | 2 | 3 | 4 | 5 | 6 |
| This employee likes this boss | 1 | 2 | 3 | 4 | 5 | 6 |
| This boss likes this employee | 1 | 2 | 3 | 4 | 5 | 6 |

Your gender (Check one): ☐ Male ☐ Female

Your age: _____

Ethnicity: (Check one): ☐ White ☐ Asian ☐ Other____

☐ African-American ☐ Hispanic

How tall are you? Feet_____ Inches _____

Would you describe your height as short ____ medium _____ or tall _____ (Check one)?

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