Sub-Par Attributions:

Why Women Give up Golf

by

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ABSTRACT

In the United States, recreational female golfers give up golf at twice the rate of recreational male golfers. This study explored the causal attributions of 240 recreational golfers after a practice session at a public golf facility. Attributions can be adaptive or maladaptive after a performance and can influence subsequent motivation to engage in a similar task again. It was hypothesized that male and female golfers would make significantly different attributions for their performance and that female golfers' attributions would be maladaptive. As the attrition rate for female golfers is highest in the first five years, it is also hypothesized that women's attributions will become more adaptive over time and that attributions will be moderated by the number of years playing golf and perceived level of success.

A survey was used to measure golfers' attributions and general questions provided data for the number of years playing golf and gender. The subscales in the attribution survey were internal control, external control and stability. Attributions are adaptive or maladaptive depending on the level of perceived success, so success of the practice performance was collected.

The hypothesis that recreational female golfers make significantly different attributions than recreational male golfers was supported only by the external control subscale. Female golfers perceived their performance as significantly less successful than male golfers. Considering this perception of success, women golfers' attributions were maladaptive. The hypothesis that women golfers' attributions become more adaptive over time was supported.

Time playing golf predicted a significant amount of variance for internal attributions of female golfers. However, the hypothesis that attributions will be moderated by the number of years playing golf and perceived success was not supported.

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Chapter 1

In the United States alone, golf is a $60 billion business (National Golf Foundation, 2006). According to Beditz (2009), three-million new golfers take up the game every year. These new players become new industry customers and buy equipment, take lessons, join and utilize golf club facilities and pay greens fees. Of these new golfers, the golf industry only retains 50% of players who take up the game as life-long customers (Beditz, 2009). Compared to other sports, this retention rate is relatively healthy. Tennis has a retention rate of 20% and skiing has a retention rate of 15% (Bedlitz, 2009). Although golf's retention rate compares favorably to these other sports, it should be remembered that age may be prohibiting in tennis and skiing, and less so in golf. The average age of an American golfer is 51 years old (Junior, Senior Women are New Golfers,1999). The average age of an American skier is 35.1 years old (American Recreation Coalition, 2010) and the average age of an American tennis player is 47.5 years old (Andrew & Casper, 2008). Of all the new golfers, there is more growth in female participation than any other sector (PGA, 1994). However, females do not persist in golf. In a 2006 study by the National Golf Foundation (NGF), a grass-roots golf think-tank, it was reported that five-years after taking up golf, the attrition rate for female golfers is twice that of male golfers (27% men, 54% women). This high attrition rate of female golfers reduces the golf industry's potential revenues from these women as long-term customers. Although the attrition rate of women golfers is a concern to the golf industry, to date there has been very few, if any, empirical studies that attempt to explain the phenomenon. I

framed the question as a motivation one – looking at the possible differences in the attributions (beliefs) that male and female golfers have about their performance. I also examined some of the ways in which the industry influences these beliefs.

It is this unexplained attrition rate that makes this study of interest. Why do women who choose to take up golf stop playing within the first five years? Why is the attrition rate of women in golf twice that of men? What are the motivational differences that exist between male and female golfers that contribute to the large attrition rate of women golfers? These questions are ripe for studying.

The Current Explanation of Why Women Quit Golf

No studies have satisfactorily explained why women quit golf. There have been no empirical studies conducted to back up popular assumptions offered by the golf industry to examine the attrition rate of women golfers. One explanation the golf industry offers for the attrition rate of women golfers is that the entry barriers are too high (WIGI, 2005). The study by *Women in the Golf Industry*, commissioned by the National Golf Foundation claims that of 12 million former female golfers, 3.7 million of them stopped playing because of the entry barriers. The report was unclear about exactly what these barriers are.

> Women in the Golf Industry (WIGI) does not believe this means money. It means attitude toward women, awareness of what makes women tick and providing a comfortable environment where women golfers can participate

and thrive. It is What Women Want (Women in the Golf Industry 2005, p. 2).

The study does not account for why the other 8.3 million women referenced in the study stopped playing golf. Furthermore, it is unclear how this information was collected or extrapolated.

Other reasons offered to explain why women stop playing golf are also reported by Women in the Golf Industry (WIGI, 2005). WIGI is a body of female golf experts who report to Golf 2020. Golf 2020 is an independent think-tank for the golf industry. In a recent report (2003) to Golf 2020, WIGI collected anecdotal insights about why women quit golf. This data was collected from a sample described as "member tested and friend of member tested" (WIGI, 2005 p. 11). It is not articulated who this sample is, how many participants were interviewed, the types of golf facilities the participants belonged to, what type of facility the question was referring to (public, private or country club) or the methods used to collect responses. However, from this research WIGI (2005) made recommendations to Golf 2020 and the Professional Golfers Association (PGA) that women would remain loyal customers if new women golfers have a peer mentor, golf course owners make golf courses accessible to women (reducing the number of discriminatory policies at golf courses) and improving customer service that women golfers receive. Additionally, WIGI claims that the golf industry should recognize that women play golf for social reasons and consequently should cater to those needs if it wants to retain women as customers.

Ladies Professional Golf Association (LPGA) teaching professionals Debbie Steinback and Kathy Bissell also contributed to WIGI's 2005 recommendations for retaining women golfers as customers. They addressed the attrition rate from a golf instructor's perspective—how women and men should be taught differently. Although there is no methodology or research behind their recommendations, they did hit on something relevant to this research.

> Because of the way men are wired, they see their swing as a problem to be fixed, attacked and solved. If someone says to a man, "You can't possibly play with that grip!" he will ask for information on what he is doing wrong. A woman will take that same comment as criticism; believe she is doing everything wrong. She will react emotionally and may never return to the course.
>
> Therefore, instruction for women needs to be phrased as "What You Need to Do Is," always in the positive. It should not be "The Problem with Your Swing Is," which is negative. All presentations and lessons need to be in the positive, not in the negative (Women in the Golf Industry 2005, p. 17).

These comments can, at a stretch, be interpreted as a rudimentary version of attribution theory. Although there is a lot to take offense at (the "wiring" of different genders and the "emotional" responses), I believe the intentions of these comments are meant to express a belief that male golfers will frame swing faults as internal but controllable (adaptive attribution), and women will frame them as internal and uncontrollable (maladaptive attribution). Because of women's

predisposition (perhaps because of the environment) to make these attributions, the instructor must be careful to give attributional feedback to a female golf student in a way that appears controllable and changeable and therefore increase instead of decrease motivation (Schunk, 1983).

Other recommendations made by the two LPGA instructors in the WIGI report (2005) appear to have no validity and are not backed with any theory, statistics or research. For example:

> Anatomy issues: When it comes to golf instruction, women are told unbelievably stupid things about their breasts. Although it is hard for experienced golfers to believe, the #1 question for beginning women is "What do I do about my boobs?" If an instructor can't deal effectively with this issue, bringing adult women into the game can be next to impossible. I tell women the same thing that I tell barrel-chested men. Target arm over target boob. This takes the issue out of the way.
>
> Grip: Women's hands and arms are more flexible at the elbow and wrist joints than men's. They also naturally hang at a different angle than men's. Prove it to yourself now. Stand up. Let your arms hang loosely from your shoulders. Which direction do your palms face? If a woman, they probably face your hips. If a man, they probably face behind you. That means when a man reaches out to put his hand on a golf club grip, he almost automatically grabs it in the "proper" grip position. But a woman who reaches out and grabs a club will hold it in a weak grip position. She has to rotate her hands to get to the same grip that a man has naturally. She

> also has to be very diligent about watching the way she grips the club because it is easy for her to fall into a weak grip placement. (Women in the Golf Industry 2005, p. 18)

These comments by WIGI (2005) referring to anatomy are very common within the PGA teaching sphere. As with the previous comments by WIGI experts, they are interesting from an attribution perspective. Explaining swing problems that women experience with anatomy is encouraging women golfers to make internal, stable and uncontrollable attributions for unsuccessful performances. As is explained later in this paper, these attributions are maladaptive and can lead to lack of motivation.

Beyond the recommendations made by the WIGI (2005) and descriptive analysis done by the PGA (2004), the NGF (2006) and Golf 2020 (2003), no research addresses the systemic cause of women leaving golf—that is, women not being motivated to play, practice or be involved with golf on a permanent basis.

Filling the Gap in Current Research

This research attempts to start filling the gap that exists in explaining the attrition rate of women in golf and explaining why 54% of women stop playing golf within five years of taking up the game. The purpose of this study is to address the attrition rate of women golfers using attribution theory, and investigate whether men and women golfers make different attributions about their golf performance. Attributions can effect motivation (Schunk, 1983, Kitsantas & Zimmerman, 2002) to perform a task, which is why the attributions

that women golfers make are important when investigating the attrition rate of women golfers.

As the attrition rate is highest for women who have recently taken up golf (within the first five years of playing), this study investigates whether an attributional difference exists generally between male and female golfers, and also whether the differences in attribution between genders is affected by years playing. For example, In Pilot I, I investigated whether there was a difference in attributions for male and female golfers who have played golf for five-years or less, attribution for male and female golfers who have played golf for 6-10 years, or 11-15 years or 16+ years. A distinction by years playing golf is important to make because women who have maintained enough motivation to keep playing golf will probably make different and more adaptive attributions for both success and failure, than women who are beginners. Women playing golf for 0-5 years are the most at-risk for not having enough motivation to keep playing, so I was interested in the relationship between the number of years playing golf and the attributions golfers make.

Based on prior studies examining gender attribution differences, it is unclear whether one should expect a gender difference in attribution to exist in male and female golfers. There is currently a debate among experts about whether a significant difference in causal attribution exists between male and female participants in an athletic environment. Some research has suggested differences do occur (Bird & Williams, 1980) whereas other research suggests that no differences occur (Hanrahan & Cerin, 2009) between genders.

With the exception of a study by Roberts & Duda (1984), who conducted a study with recreational racquetball players, many of the studies that have investigated the attributional differences in gender have targeted elite athletes as participants (Hanrahan & Cerin, 2009, Hendy & Boyer, 1995 Morgan, Griffin & Hayward, 1996). By virtue of being elite athletes, I suspect that the participants are more likely to make similarly adaptive attributions (Kitsantas & Zimmerman, 2002). These studies find that both male and female elite athletes make adaptive attributions for both successful and unsuccessful performances. An explanation for this could be that no athlete (male or female) will excel in a sport without adaptive attributions that lead to high self-efficacy, motivation and a sense of control over one's performance. To understand the under-representation of women in all parts of the professional golf world (players and employees), I wanted to understand the attributional patterns of women and men who are developing their interest in golf at a novice and recreational player level. An analogy used in math and science for female participation is relevant to the under representation of women in golf. If a metaphoric pipeline exists for women from a novice golf level to the expert level, the numbers of women who reach the end are influenced by the number of leaks along the way in that pipeline. The more leaks that are in the pipe means the more women drop out of golf before reaching the expert level. I view maladaptive attributions of women golfers one of those leaks.

This research uses an environment that is overwhelmingly male to measure performance attributions in sport. Previous studies examining attribution differences between genders have focused on domains that have greater gender

parody such as basketball (Croxton & Klonsky, 1982) and triathlons (Hendy & Boyer, 1993). Croxton and Klonsky (1982) interviewed 22 varsity basketball players (12 male players and 10 female players) who were assessed for attributions using a 48 question measurement after participating in a pre-season scrimmage. The winning teams and losing teams were primed before taking the survey. The winning team was told "you have a lot of natural ability" and the losing team was told "you have very little natural ability." (Croxton & Klonsky, 1982. P. 404.) In addition, the wording varied slightly for the winning and losing teams. Interestingly the attributions between genders of the winning teams did not vary significantly, but the attribution of the losing teams did. Male players in losing teams were less likely than female players to make internal and stable attribution. Instead male athletes made significantly more attribution for a losing performance to external and uncontrollable factors – such as "the other team was lucky." (Croxton & Klonsky, 1982. p. 404.)

Examples of studies that support the claim that male and female elite athletes will make similar attributions include Hendy and Boyer (1993). Hendy and Boyer interviewed 624 elite tri-athletes (443 male athletes and 181 females athletes) about the attributions they made for their performances during a triathlon season. There was no significant difference between genders for any attribution subscale (internal, external or stability).

In contrast to this past body of work, this study examines the difference in attributions of recreational male and female golfers in a male-gendered

environment. It is unclear if past research has consciously sought out an environment that is male-gendered.

Motivation and Female Golfers

Women golfers, like participants in any activity, require motivation to engage in their chosen task (Ryan, Williams, Patrick, & Deci 2009). We can assume that women who take up golf for recreation purposes have enough personal motivation to initially engage in the activity, but their motivation to play is not sustained. Motivational theorists have identified numerous frameworks to explain why a person engages and continues to persevere at a task. Theories of motivation have evolved since drive theory broke apart behaviorism. Drive theory explained motivation as a response to internal states of arousal (Ford, 1992) and led the motivation theorists away from a stimulus-response model evident in behaviorism and towards motivation theories that considered the internal cognitive aspects of motivation. These theories have included Self-Determination Theory (Deci and Ryan, 2008), Expectancy-Value theory (Wigfield & Eccles, 1992), Bandura's Social Cognitive Theory, (1997), Goal Setting (Locke and Latham, 2002), Implied Perceptions of Ability (Dweck & Masters, 2009) and Attribution Theory (Weiner, 1986). All of these theories explain the motivation that a person has to engage in, or to persist at a task. Of these theories, this paper will focus on Weiner's Attribution theory (Weiner, 1986) to explore the loss of motivation and subsequent attrition rate of female golfers. I selected attribution theory to address the attrition rate of women golfers because the framework is already commonly used (perhaps unknowingly) by the participants, industry and

instructors. I suspect that attributions are already part of a recreational golfer's thought process, as opposed to goals, which will result in more natural responses from participants.

Chapter 2

Literature Review

Weiner's Attribution Theory

Weiner's (2000) philosophy of attribution stems from a belief that as human beings we want to try to understand and explain our performance outcomes. These outcomes could be athletic performances, academic pursuits, or other intrapersonal activities. When humans think about why they succeeded or failed, they construct a reason (attribution) for that outcome. This analysis influences their beliefs about what is possible for their future. These beliefs, in part, determine their willingness to expend effort on future activities. Weiner (2008) and his colleagues Heider, Jones and Kelley, therefore, conclude that attributions are one of the foundations for motivation. When we conclude why a certain outcome happens, our behavior changes as a result. It is this connection between how we explain an outcome (attribution) and how our behavior subsequently changes, that makes attribution theory part of the motivation framework.

Weiner's attribution theory (1986) is built around three dimensions of attribution They are locus of control, stability and controllability. Weiner's definition of locus of control is broken into two prongs—internal or external. Using Weiner's Attribution framework (Weiner, 1986), attributions (explanations) about a round of golf or performance can be internal, external, controllable, uncontrollable, stable or unstable. An internal attribution is an explanation that is specific to an individual such as dedication to an activity, or

perceived aptitude, or one's health. An external attribution is explaining an outcome by something outside of us, such as luck, or the weather or the golf instructor. These internal and external attributions can then be categorized further as controllable, uncontrollable, stable or unstable. Factors considered controllable may vary from person to person, but generally we believe we can control how much time we practice golf, but we cannot control the weather. Stable factors are those that we expect to be present every time, such as one's aptitude or skill at a task. Unstable factors are those that we do not expect to be present every time, such as playing a course that suits one's game, or being paired with a playing partner that is off-putting.

Attributions in a golf context. Weiner's attribution theory (1986) can be used to frame the explanations golfers give about their golf performance. To give these various attributions some context, I will apply them to a particularly bad golf performance (attributions for failure). Internal attributions include perceived causations within the person, such as levels of effort or ability. So in the case of the bad golf performance, the internal attribution could be that the player thinks she has no aptitude for golf or that she did not perform well because she did not practice enough. External attributions include causations that are outside of the person, such as luck or the influence of others. In the case of golf, this could be the player making attributions towards bad luck or her playing partner distracting her and putting her off her game.

Weiner (1986) defines stability as causations of an outcome that are perceived as staying the same over time. For example, after a bad performance a

golfer may attribute the outcome to no aptitude (perceived as stable and unlikely to change) or bad weather (unstable and likely to be different the next time the player performs).

The last dimension in Weiner's framework (1986) is controllability. Some attributions are perceived as controllable and some are not. For example, the golfer can control how much she practices but she cannot control the weather.

Weiner argues (1986) that attributions influence the motivation of an individual to further participate in a task. A case study conducted by Van Laar (2001) demonstrates this. Van Laar (2001) explored the attributions made by African-American high-school students with a high drop-out rate. Van Laar found that the African-American students attributed their poor academic performance to lack of aptitude for school (internal and stable). The study also found that the African-American students made attributions relating to a hostile academic environment (external and stable). Using Weiner's attribution framework (1986), Van Laar explained the high drop-out rate. African-American students at this particular high school are unlikely to be motivated to stay in school because they attribute their poor academic performance to perceived causes that are stable for the foreseeable future and are unchangeable.

Adaptive attributions. Adaptive attributions are attributions that retain or increase self-efficacy and motivation (Schunk, 1983). After a good performance, adaptive attributions are internal, stable and controllable. After a failing performance, adaptive attributions are external, unstable and controllable.

Adaptive attributions are self-serving—an individual takes credit for good outcomes and defers responsibility for bad outcomes.

An example of an adaptive attribution in golf is attributing a bad performance to feeling ill. This attribution for a bad golf performance is internal, uncontrollable, but unstable – given time our health mostly improves so we do not see illness as something that will affect our golf performance every time. Another example of an adaptive attribution for a poor performance is attributing poor performance to bad advice received from an instructor. This attribution is an external, controllable and unstable attribution. The player can choose not to visit that instructor again. Attributing a good performance to the amount of time put into practice is internal, controllable and stable. Time spent practicing is an internal decision. It is something the player can control, and the amount of time spent practicing is stable, if the player wants it to be.

Maladaptive attributions. Maladaptive attributions are attributions that decrease self-efficacy and motivation (Schunk, 1983, Kitsantas & Zimmerman, 2002). After a good performance, maladaptive attributions are external, unstable and uncontrollable. After a failing performance, maladaptive attributions are internal or external, stable and uncontrollable.

An example of a maladaptive golf attribution is attributing a poor performance to "not being good at golf." This attribution is an internal, stable and uncontrollable attribution. Attributing a poor performance to not having enough money to buy good golf equipment or take lessons is external, stable and uncontrollable. These two attributions are maladaptive and can lead the player to

feel helpless in her ability to improve her golf performance. In the contexts of other sports research has suggested this cycle can lead to low self-efficacy and low motivation for continuing to engage in the activity (Cleary & Zimmerman, 2001, Burton & Rainer, 1986) I expect these findings to hold true for golf as well.

Attributions and Self-Efficacy

Bandura (1986, 1997) has argued that the attributions people make about their performance influences their self-efficacy. Making adaptive attributions after a poor performance (e.g. controllable), allows players to retain their self-efficacy and motivation to play (Cleary & Zimmerman, 2001, Burton & Rainer, 1986). The connection between attribution, self-efficacy and motivation were demonstrated by Schunk (1986). Schunk's research involved four groups of children performing math exercises. Each group received different attributional feedback from their teacher for doing well on a math exercise. The first group of children received ability attributions for completing a question correctly, the second group received effort attributions for correctly answering a question and the third group received ability and effort attributions for a correct answer. The control group received no feedback. After the math exercises the self-efficacy of the children was measured by asking the children how confident they were of correctly answering a math question similar to those in the math exercise (they did not have to complete the math question). A main effect ($p < .001$) was found for ability attributions on self-efficacy. The other two groups receiving effort and ability and effort attributions measured significantly higher levels of self-efficacy ($p < .05$) than the control group. All three groups that received attributional

feedback completed more math questions correctly in subsequent math exercises than the group that received no feedback. This study underlines the relationship between attributions made after a performance and subsequent levels of self-efficacy for that performance. The implication for golf is that novice and intermediate players who make maladaptive attributions for their success or failure on the golf course may have less self-efficacy and less motivation to continue playing.

The Gendered Golf Environment

An important consideration for this study is the male-gendered environment of golf. Golf is globally a male-dominated environment. According to the PGA (2010), less than 3.75% of lead positions in the golf industry are held by women (Head Instructor, Director of Instruction or Director of Golf). The people holding lead positions are respected by golfers who play or practice at a golf facility. They are decision makers at the facility and perceived experts at anything golf related. This male dominated environment provides very few female role models for women taking up the game of golf and can potentially create an uninviting environment. This assumption was supported by a 2002 study by McGinnis, McQuillan and Chapple. Their study reported that women in the northeastern United States found golf to be a hostile environment.

This phenomenon was further researched by Knoppers and Anthonissen (2008). Knoppers and Anthonissen interviewed 50 directors or managers of large sports organizations in Holland. All participants were white male executives. Although no organization that any of the participants represented were overtly or

covertly discriminatory, the underlying discourse of what made a manager or director of a large sporting organization successful is defined by a male gendered subtext. All participants were interviewed for 90 minutes. The interviewer asked participants to articulate the responsibilities for their position, the daily routines and the required skills needed to be successful at running a large sports organization. The participants were also asked what the relationship was between their work and domestic lives. Although no participant in the study said that only a man could lead a sports organization, it was insinuated that a man would be better. For example, to be successful in the sports industry the participants said that someone must be tough and persistent to deal with the jungle they work in.

> "…[the] jungle... [in which] justice or truth do not rule but the person with the biggest mouth is most powerful... the rule of the strongest is the norm...the need to win is part of sport...." (Knoppers & Anthonissen, 2008, p. 95).

Other characteristics the participants cited as being important for success in an executive sports position included being able to control, being resistant to stress and showing up when you are ill (Knoppers & Anthonissen, 2008). A successful leader in a sports organization should be competitive in a sport to gain respect. It is also considered preferable if a sports leader has a partner who accepts that the job takes priority over other aspects of life. The significance of domestic life was described further – having someone who will take care of domestic life so it does not interfere with the job. It is also perceived important to display the right image for the organization. This includes being seen at sporting

events, participating in sports, being in good physical shape and wearing powerful clothing at business meetings. So although lead jobs in the sports industry are theoretically open to women, it is implied by Knoppers and Anthonissen (2008) that the reality is different. The perception that exists in the sports world is that in order to perform the job well, the position holder should have traditional male attributes—strong, athletic, loud, aggressive and with a wife at home. More specifically, the ideal executive should be a male. Although this is not the narrative of Knoppers and Anthonissen's article, the subtext certainly suggests that despite sports' overt anti-discriminatory policies, the reality is that only men are considered qualified to fulfill the demands of holding an executive position in the sports industry.

Golf is somewhat unique in that even if you chose to play golf with female partners, the overall environment is still male. A two-some or four-some on the course can consist of same-sex players, but it is likely that other players on the course are a combination of male and female golfers. So even if women chose to play in an all-woman foursome they are still interacting with other players on the golf course and there is a good chance the women will be playing in front of, or behind groups of male golfers. In addition, most staff members at the courses are males. Unlike other sports where women can create an all-female environment (ex. volleyball, basketball) the environment in golf is less controllable. Regardless of the make-up in one's own group, the environment can be intimidating for novice women golfers.

The male gendered environment on the golf course is relevant to this study of attributional differences between male and female golfers because male gendered environments have been shown to influence attributions women make in such environments. For example, in an industrial setting, the environment has been shown to effect attributions of women performing tasks in a male environment. Koch, Muller and Sieverding (2008) examined attributions of male and female college students after a negative and positive stereotype had been induced regarding whether male or female students were better at repairing faulty computers (positive group = women were better at repairing computers, negative group = males were better at repairing computers and neutral group = no information given). The women in the group manipulated to think men were better at repairing computers than women reported significantly more maladaptive attributions when failing to repair the computer than the women in either the neutral or positive group. Women's attributions were also significantly more maladaptive than the male students in the same group. Female students' maladaptive attributions for failure were internal and male students' adaptive attributions for failure were external. Within the context of golf, I expect, because of the prevalence of negative stereotypes of women in the golf industry women tend to have more maladaptive attributions than men for both successful and unsuccessful performances.

Attributions and Satisfaction

This research examined the role of perceived satisfaction with performance on male and female golfers' attributions. This study builds on other

work that correlates satisfaction with one's performance to type of attribution made after a performance (Roberts & Duda, 1984). This relationship is demonstrated well by Anshel and Mansori (2005). Thirty college athletes were recruited for a study and all participants were measured for levels of perfectionism. Perfectionists were selected for this study as it was anticipated that their satisfaction level would be easier to manipulate than non-perfectionists. The group was split into three groups that completed physical trials. After the trials, participants were given either negative feedback (experimental group), neutral feedback or no feedback (control). Although there was no difference in how the three groups actually performed on the test, the attributions made by the groups were significantly different depending on the feedback given to them ($p = .006$). This experiment suggests that despite ability and performance of the groups being equal, the attributions made by the groups differed significantly due to the levels of satisfaction felt by the participants with their performances. Consistent with other research, Anshel and Mansori (2005) found that the group of perfectionists given negative feedback for the performance made significantly more external attributions and the group of perfectionists given positive feedback for the performance gave more internal attributions.

The relationship between perceived level of satisfaction and attributions was seen again in a study by Biddle and Hill (1988). This study was based on causal attributions, as defined by Weiner (1986). Twenty-four male and twenty-two female undergraduate students paired up with a same-sex partner and competed in an ergometer bike race. All participants were competitive athletes

enrolled in a sports related undergraduate program. The winners of each race reported more internal attributions and the losers of each race reported more external attributions. Winners of the races (those making internal attributions) reported significantly higher levels of satisfaction ($p < .05$) and the losers of the races (those making more external attributions) reported significantly higher levels of dissatisfaction ($p < .05$). There were no significant differences between genders for either the winning or losing group.

The relationship between perceived satisfaction after a performance and attributions made for the performance was explored further by Greenlees, Stopforth, Graydon, Thelwell, Filby & El-Hakim (2007). The authors surveyed 528 athletes (221 male athletes and 207 female athletes) from a multitude of team sports (soccer, rugby, hockey, basketball, netball, volleyball and freebie). The participants' attributions for sports performance was measured using a revised Causal Dimension Scale for Teams (Mcauley, Duncan & Russell, 1992). The participants' perception of success was measured by a likert-type scale. After a successful (satisfying) competition, players who considered the tournament important made attributions to the performance that were stable and controllable. After an unsuccessful (unsatisfying) competition, the athletes attributed the performance to more external and uncontrollable factors – therefore maintaining self-efficacy.

Based on the current body of work relating causal attributions to satisfaction, recreational golfers who report high levels of satisfaction with their

performance will differ in their attributions from recreational golfers who report low levels of satisfaction with their performance.

Attributions, Motivation and Performance in Sport

The measurement of attributions and the relationship with motivation in athletic environments has a long history. Burton and Rainer (1986) addressed the high drop-out rate of youths in wrestling from a motivational perspective using an attribution framework. The study consisted of 83 current wrestlers ranging from 7 - 17 years old, and 23 former wrestlers ranging from 8 - 17 years old. These participants were put forward by coaches of wrestling clubs across the United States. The researchers contacted the participants by mail, and they were asked to complete surveys and return them in a pre-paid envelope. The packet consisted of surveys that gathered information about perceived ability and attributions of the wrestlers or former wrestlers. Between the wrestler and former wrestler groups there was a significant difference of external success attributions ($p < .05$), a difference of internal success attributions ($p = .07$) and a difference in internal, unstable failure attributions ($p = .08$). The wrestlers who continued to wrestle made more internal attributions for success and unstable attributions for failure.

Although there is evidence of the relationship between attributions, self-efficacy, motivation and performance in sports (Cleary, Kitsantas & Zimmerman, 2000) —attributions can sometimes be socially constructed. Miserandino (1998) discusses a socially constructed dogma that exists in sport; “the more I practice, the luckier I get” (a phrase coined by golfer Gary Player). Miserandino believes that coaches incorporate this attribution of effort for luck and success into training

sessions. Although effort can be a good attribution, luck as an attribution can be maladaptive. Feedback from a coach should encompass factors and strategies that a player feels are controllable (although practice is controllable, luck is not). In Miserandino's 1998 study, a high school basketball team was divided into two groups (matched for ability). The two groups participated in a free-throw contest, and the groups performed equally well. One group was coached by the head coach as normal, and the other group was coached by the assistant coach who gave feedback for success and failure that incorporated specific strategies and was controllable. After three weeks of twice weekly practice sessions, the group that received the attribution coaching intervention (with the assistant coach) outperformed the other group in a free-throw shoot-out by a significant margin.

Attributions and Gender

Current research is ambiguous about whether a difference in causal attributions exists between genders. As previously mentioned, the attributions we make about performance may sometimes be socially constructed. This is supported in research by Bird and Williams (1980). Bird and Williams studied the attributions of children in sport as they neared adolescence. Research by Bird and Williams builds on other studies that have shown a significant difference in attributions made by genders concerning athletic performance. Bird and Williams (1980) interviewed 192 male athletes and 192 female athletes aged between 7 -18 years old. The groups were broken into four different age categories (7 - 9, 11 - 12, 13 - 15 and 16 - 18 years old). All participants were read three stories about sporting outcomes and were then asked to respond to close-ended questions about

why athletes may have been successful or not. Bird and Williams reported that only at age 13 there was a gender difference in the participants' attributions. By age 13, male athletes explained successful outcomes in terms of effort (internal and controllable) and by age 15 girls explained outcomes in terms of luck (external and uncontrollable).

Further support for a difference in attributions by gender is given by White (1993). White examined the attributions of male and female non-elite athletes of different age categories. The study participants were 11 boys and 11 girls (aged 14-16 years), and 11 males and 11 females (age 28 - 26 years). After a game of softball the players were administered an Amended Causal Dimension Scale (Macauley, Duncan & Russell, 1992) to measure attributions. Of the winning players, the male athletes (across age categories) made attribution to personal control (internal). By contrast, the female athletes made external attributions for their win.

Equally relevant to my study, but outside of the athletic arena, is a study demonstrating the differences in attributions made by men and women in gendered environments. These studies are relevant because golf is played in a male-gendered environment. A study by Meece, Glieke and Burg (2006) recorded attributions of women in a male dominated field – math and science, and compared them to attributions made by male students. The results showed a significant difference in the attributions by gender – with the male students' attributions being more adaptive (success attributed to internal causes and failure attributed to external causes). Furthermore, the study then recorded and compared

attributions of men and women in a female gendered environment, reading and writing. Those results were also significant – with the female students' attributions being more adaptive (success attributed to internal causes and failure attributed to external causes). Considering the assumption we make in this current study that golf is a male gendered environment, Meece and her colleagues' findings are relevant when comparing the attribution of women golfers to men in a male-gendered golf environment.

In contrast to the research that supports a gender difference in attributions of male and female athletes, other studies argue that no gender differences exist. Hanrahan and Cerin (2009), acknowledged that past research looking for gender differences in attributions of athletes was inconsistent. To explain the inconsistency, the authors hypothesized that attributions could depend on the type of sport played—either an individual or team sport, and this difference must be factored out when studying attributions in athletes. The research suggested that a member of a defeated team can more easily put blame on other teammates for a poor performance (external). By contrast, performance in a sport played by individuals will lead to internal attribution. Hanrahan and Cerin hypothesized that if the sport and level of participation is similar; only then will there be attributional differences between genders. In their research, the participants were 272 Australian athletes (108 male and 164 female). Their ages ranged from 12 - 74 years old and all participants competed in their sports respectively at international, national, club or recreational level. In this study, Hanrahan and

Cerin found significant differences in attribution by sport (individual versus team), but no difference in gender despite their hypothesis that they would.

Attributions of Male and Female Elite Athletes

As previously mentioned, researchers are inconclusive about whether a gender difference exists with regard to attributions. This paper argues that the research is inconclusive in part because previous attribution studies have not parsed apart the comparisons of elite and novice male and female athletes. It is reasonable to assume that elite athletes of both genders make adaptive attributions (internal, controllable and stable attributions for good performances and external, controllable and unstable attributions for poor performances). Without adaptive attributions it would be difficult to maintain the self-efficacy and motivation to excel in a sport. When one separates elite from novice athletes, I expect to see a gender difference at the novice level but not at the elite level.

Further support that no attributional differences exist between elite athletes comes from a study by Morgan, Griffin and Hayward (1996). The participants were 342 female athletes and 413 male athletes. All participants were between 13-18 years old and belonged to New Mexico track teams. The Causal Dimensional Scale (Macauley, Duncan & Russell, 1992) was used to measure locus of control, stability and controllability attributions. Hypothetical success or failure scenarios were read to the athletes who then responded with attributions about the outcome. No significant difference was found between male and female athletes' attributions for either the success or failure scenarios.

Aditionally, Holt and Morley (2004) interviewed 41 talented British school children with a mean age of 14.1 years old. All children competed at county level (a county is a region within the United Kingdom) in their respective sport. The participants were asked to respond to questions about why they thought they were better at their particular sport than other children. No significant difference was reported between genders and all participants attributed their success to effort and practice.

Attributions of Novice and Expert Female Athletes

Further research is needed to develop the body of work examining the differences between elite and novice female athletes. Plenty of research exists that examines the attributions of female elite athletes and research exists that examines the attributions of female novice athletes – but very few studies compare the differences between the two levels of expertise. The difference of attributions for athletes of different expertise levels is of interest to my study. Women who have played golf for less than five-years are novice golfers who have a propensity to give up golf. I expect the attributions of these novice golfers to vary from the attributions of more experienced female golfers who have played golf for more than ten years.

Of the work that addresses the attributional differences between novice and expert female athletes, Kitsantas and Zimmerman's work (2002) demonstrates the point most clearly. Kitsantas and Zimmerman assessed self-regulation among 30 expert, non-expert and novice female volleyball players during an over-arm serving practice session (the over-arm serve is considered the

most difficult shot to master so would expose self-regulation strategies). Attributions made by players were considered an aspect of the self-reflection stage within the self-regulation model. Supporting the authors' hypotheses, there was significant differences in attributions between all groups after a perceived failing performance (expert, non-expert and novice). The expert players made more attributions to specific technique strategies to explain poor performance (external, unstable and controllable attributions), and the novice players made attributions to lack of power (internal, stable and uncontrollable attributions) to explain poor performance.

The findings by Kitsantas and Zimmerman (2002) are similar to findings made by Clearly and Zimmerman. Clearly and Zimmerman (2001) have conducted parallel studies that examine the difference in attributions between expert and novice male basketball players. The results of this study are similar to the results reported by Kitsantas and Zimmerman (2002) – significant differences in attributions exist between exert and novice groups.

Measures of Attributions in Athletic Environments

The Revised Causal Dimensional Scale (CDSII), (Macauley, Duncan & Russell, 1992) is one of the more frequently used scales to measure attribution in athletic performances. Wilson and Stephens (2005) used the CDSII when examining how high school athletes' perception and expectations of athletic performance correlate with attributions. This scale was also used by De Michelle, Gansneder and Solomon (1998) who studied whether attributions differed between wrestlers after a win or loss in the first round of a competition. Neither of

these studies reported the Cronbach alpha (1951) in their current research, but instead deferred to the reliability Cronbach's alpha reported by the authors for each subscale: stability $\alpha = .70$, locus of control $\alpha = .75$, personal control $\alpha = .92$ and external control $\alpha = .92$ (Macauley, Duncan & Russell, 1992).

Other studies have used altered versions of the CDSII scale (the alterations have been different for each study). The authors did not state if the scale was changed because of reliability problems or other reasons. Tagger and Neubert (2004) used an altered version of the scale to measure attributions of team members after a losing performance. Tagger and Neubert (2004) combined the CDSII scale with another attribution scale by Struthers (1998). The combination of the two scales resulted in Cronbachs alphas (1951) of 0.84 for locus of control, 0.81 for stability and 0.76 for a combined control measure.

The CDSII scale was also used by Homsma, Van Dyck, De Gilder, Koopman and Elfring (2007). Homsma and his colleagues used the scale to measure attributions in a business environment. The authors changed the root wording of each question to make it more applicable to their subject matter. For example, instead of the root reading "is the cause something…." (Homsma et al. 2007, p. 569). The authors changed it to "is the cause of the error something…" (Homsma et al.2007, p. 569). Homsma and his colleagues also removed the three questions relating to external control that are in the scale and added three self-developed questions relating to responsibility. The authors reported their own Cronbach's alphas (1951) for this scale of 0.61 for stability, 0.71 for locus of control and 0.69 for personal control. All reliability alphas were lower than the

authors' reported measure of reliability for each subscale of α =.70 for stability, α =.75 for locus of control, α =.92 for personal control and α =.92 for external control (Macauley, Duncan & Russell, 1992).

Other notable studies that have measured attributions in sport are by Zimmerman and Cleary (2001), and Kitsantas and Zimmerman (2002). Both of these studies asked participants to respond to open-ended questions about the cause of their performance. The answers given by the participants were coded and put into different categories of causal attributions by the researchers. Similar methodology was used by Ross, Davies and Clarke (2004), who argue that attributions vary when athletes are given freedom to express them in their own words instead of using a forced choice scale.

For this study I chose to measure attributions of golfers using the CDSII (Macauley, Duncan & Russell, 1992) because it has been used more frequently in previous studies to measure athletic attributions.

Significance of this Study

Exploring the potential reasons for the high attrition rates in female golfers is of interest to both the golf industry and attribution researchers. Firstly, the golf industry has been aware of the disproportionately high attrition rate of women golfers for many years. If the golf industry can reduce the number of women who give up golf, it stands to gain more consumers and higher revenues.

For educational psychologists, this study presents an opportunity to examine attributions of adult male and female recreational golfers. The significance of this study is that the participants are adults who have chosen to

play golf – therefore demonstrating sufficient motivation to initially engage in the activity. Additionally, the environment for the study, golf, is male-gendered. These factors distinguish this study from previous studies that address the different attributions between male and female athletes.

Research Questions

The goal of my research was to look at the attrition rate of women golfers within Weiner's attribution framework (Weiner, 1986). Based on the previously discussed literature, my research hypothesis was that attributions of male and female golfers differ significantly. This pilot study addressed five research questions (see Table 1).

Table 1

Pilot One Research Questions

Research questions
1. Do male and female golfers make different attributions about their performance?
2. Is there a relationship between years playing golf and attributions golfers make?
3. Do male golfers report higher levels of satisfaction than female golfers?
4. Is there an interaction between gender and years playing golf on attributions?
5. Is there an interaction between gender and satisfaction on attributions?

Chapter 3

Pilot Study I

Method

The purpose of the pilot study was to test the design of the study, test the participation rate of golfers recruited to the study, and also to ensure that the assessments were understandable and appropriate for golfers. In particular, I wanted to test if the research design captured golfers with a full range of experience.

Participants. Twenty-five golfers participated in the Pilot 1 study (18 males and 7 females). Participants of the pilot study were recreational weekend golfers at a nine-hole public facility in Arizona. These participation numbers are consistent with the national overall participation rate of golfers by gender (males 76% and females 24%) according to Bedlitz (2009). Seventy-five percent of golfers asked completed the survey. The majority of participants (14) indicated they were between 51-60 years old. All participants were Caucasian.

Procedure. The public facility where the data was collected is a nine-hole course, and golfers were approached after they had completed the ninth hole. The surveys and the conditions of the pilot study replicated those intended for the research study. Golfers were met after completing their final hole, participation was optional and there was no compensation offered for participation. (See Appendix A and C for instruments used and Apendix G for Office of Integrity and Assurance Approval.) Golfers were informed that the data collection was for a

study at Arizona State University to investigate how golfers explain the cause of their golf performance.

Measures. The pilot survey consisted of two surveys and six additional demographic questions (see Appendix A and C for scales used). The demographic questions asked participants their age and gender. In addition, the following questions were asked; "what was your goal for your last practice session?" "Did you achieve your goal for your last practice session?" "Number of years you have played golf?" and "Have you ever taken a golf lesson?" These general questions were asked to better understand the goals of the golfers, their history and experience in golf.

The Revised Causal Dimensional Scale (CDSII), (Macauley, Duncan & Russell, 1992). This scale was used to measure attributions golfers made about their performance. The scale instructs the participants to think about their golf performance and the cause of it. The participants then responded to 12 questions on a 1-9 likert type scale (1 = *not very likely*, 9 = *very likely*). The scale is divided into four subscales; locus of control, personal control (internal), external control and stability. Each subscale is comprised of three questions. A participant's score can range from 3 - 27 for each subscale (see Appendix A). Totals for items in each subscale are summed to produce each subscale score. The authors reported this scale to have a measure of reliability for each domain as $\alpha = .70$ for stability, $\alpha = .75$ for locus of control, $\alpha = .92$ for personal control and $\alpha = .92$ for external control (Macauley, Duncan & Russell, 1992). For this Pilot Study I conducted a

test of reliability and found Cronbach's alpha (1951) α = .52 for stability, α = .25 for locus of control, α = .20 for personal control and α = .60 for external control.

Self-Reaction Scale (Cleary, Kitsantas & Zimmerman, 2000). Golfers' satisfaction with their performance was measured using one item "satisfaction with performance" (see Appendix C). This item has been used in previous studies to measure self-satisfaction (Kitsantas & Zimmerman, 2002, Cleary & Zimmerman, 2001). Golfers were asked to think about their golf practice and indicate on a scale of 0-100 (in 10 point increments) how satisfied they were with their golf performance. Zero indicated *not at all satisfied* and 100 indicated *very satisfied*.

Results

Analysis of the data focused on answering the research questions. Independent *t*-tests were conducted to examine overall difference by gender for attribution subscales and levels of satisfaction. ANOVAs were conducted to determine the difference between gender, number of years playing golf and each of the dependent attribution variables (stability, personal control, external control, locus of control and satisfaction). Descriptive statistics of the data is displayed in Table 2.

Table 2

Descriptive Statistics of Golfers' Attributions

	n	*M*	*SD*	Skewness	Kurtosis
Stability	25	12.68	5.28	-.33	-.99
Personal	25	21.80	3.65	-.32	-.88
External	25	11.96	4.77	.66	.36
Locus	25	22.16	3.49	-1.04	.78
Satisfaction	25	58.00	29.44	-.52	-1.03

Note*:* $N = 25$

Research question one. To address the question "do male and female golfers make different attribution for their performance?" I conducted independent samples *t*- tests to compare the mean difference of attribution subscale totals by gender. See Tables 3-6.

Table 3

Descriptive Statistics of Stability Attributions

	n	*M*	*SD*	Skewness	Kurtosis
Male	18	13.06	5.32	-.35	-.75
Female	7	11.88	5.66	-.36	-1.57

Note: $N = 25$. * indicates significant difference $p < .05$.

Table 4

Descriptive Statistics of Personal Control Attributions

	n	*M*	*SD*	Skewness	Kurtosis
Male	18	21.65	3.95	-.24	-.97
Female	7	22.13	3.14	-.52	-.96

Note: $N = 25$. * indicates significant difference $p < .05$.

Table 5

Descriptive Statistics of External Control Attributions

	n	*M*	*SD*	Skewness	Kurtosis
Male	18	11.47	4.40	.24	-.28
Female	7	13.00	5.66	1.092	.78

Note*:* $N = 25$. No significant difference found.

Table 6

Descriptive Statistics of Locus of Control Attributions

	n	*M*	*SD*	Skewness	Kurtosis
Male	18	21.71	4.04	-.70	-.23
Female	7	23.13	1.73	-1.14	.13

Note: $N = 25$. No significant difference found.

Research question two. To address the question "is there a relationship between years playing golf and attributions golfers make?" I conducted ANOVA analysis to compare the mean difference of attribution subscales by gender and the amount of time the golfers have played golf. See Tables 7-10.

Table 7

Analysis of Variance for Stability Attribution

	Male (*M*)	Female (*M*)
0 - 5 years	7.00a	7.00a
6 - 10 years	17.00b	17.5b
11 - 15 years	10.5a	15.00b
16 + years	14.1b	9.5a,b

Note: $N = 25$ (7 male and 18 female). $F(3,24) = 1.391$. Levene's test of equal variance = .287. Subscripts indicate significance at $p < .05$.

Table 8

Analysis of Variance for Personal Control Attribution

	Male (*M)*	Female (*M*)
0 - 5 years	20.00	25.00
6 - 10 years	22.00	23.50
11 - 15 years	19.00	19.00
16 + years	22.33	21.5

Note: $N = 25$. $F(7,17) = .448$ Levene's test of equal variance $p = .036$. No significant differences found.

Table 9

Analysis of Variance for External Control Attribution

	Male (*M*)	Female (*M*)
0 - 5 years	9.50	11.00
6 - 10 years	9.00	15.5
11 - 15 years	13.5	17.00
16 + years	11.66	11.25

Note: $N = 25$. $F(7,17) = .416$. Levene's test of equal variance $p = .0008$. No significant differences found.

Table 10

Analysis of Variance for Locus of Control Attribution

	Male (*M*)	Female (*M*)
0 - 5 years	19.00	25.00
6 - 10 years	20.00	22.00
11 - 15 years	23.00	24.00
16 + years	22.08	23.00

Note: $N = 25$. $F(7,17) = .388$. Levene's test of equal variance $p = .03$. No significant differences found.

Research question three. To address the question "do male golfers report higher levels of satisfaction than female golfers?" I conducted a one-tailed independent *t*-test to compare means of satisfaction scores by gender. See Table 11.

Table 11

Mean Comparison of Satisfaction by Gender

	Male Golf (n = 17)		Female (n = 8)			
	M	*SD*	*M*	*SD*	*t*	*p*
Satisfaction	63.53	27.60	46.25	31.59	1.39	.176

Note: $N = 25$. No significance found between group means $\alpha = .05$.

Research question four. To address the question "is there an interaction between gender and years playing golf on attributions?" I conducted a 2 (gender – male or female) x 4 (years playing golf – 0 - 5, 6 - 10, 11 - 15, 16 +) ANOVA. There was a non-significant interaction between gender and years playing golf, on stability attributions, $F(7,17) = .75$, $p = .54$. The overall model accounted for about 10% of the variance ($R^2 = .36$, Adjusted $R^2 = .10$).

There was a non-significant interaction between gender and years playing golf, on personal control attributions, $F(7,17) = .41$, $p = .75$. The overall model accounted for about 19% of the variance ($R^2 = .16$, Adjusted $R^2 = -.19$).

There was a non-significant interaction between gender and years playing golf, on external control attributions, $F(7,17) = .37$, $p = .78$. The overall model accounted for about 21% of the variance ($R^2 = .15$, Adjusted $R^2 = -.21$).

There was a non-significant interaction between gender and years playing golf, on locus of control attributions, $F(7,17) = .33$, $p = .81$. The overall model accounted for about 22% of the variance ($R^2 = .14$, Adjusted $R^2 = .22$).

Research question five. To address the question "is there an interaction between gender and satisfaction on attributions?" I categorized the scores for

reported satisfaction of golf performance by conducting a mean split of scores. Scores of 0 - 50 were considered non-satisfied and 60 - 100 were considered satisfied. There was a non-significant interaction between gender and satisfaction, on stability attributions, $F(3,21) = 1.75$, $p = .20$. The overall model accounted for about 16% of the variance ($R^2 = .11$, Adjusted $R^2 = -.16$).

There was a non-significant interaction between gender and satisfaction, on personal control attributions, $F(3,21) = 3.51$, $p = .08$. The overall model accounted for about 20% of the variance ($R^2 = .30$, Adjusted $R^2 = .20$).

There was a non-significant interaction between gender and satisfaction, on external control attributions, $F(3,21) = .01$, $p = .93$. The overall model accounted for about 8% of the variance ($R^2 = .11$, Adjusted $R^2 = -.08$).

There was a non-significant interaction between gender and satisfaction, on stability attributions, $F(3,21) = .02$, $p = .89$. The overall model accounted for about 9% of the variance ($R^2 = .044$, Adjusted $R^2 = -.09$).

Discussion

During the pilot study, collection of data was relatively easy. Seventy-five percent of golfers asked completed the questionnaire. As anticipated, the questionnaire took less than five minutes to complete.

The findings of the Pilot I study are difficult to interpret because of the lack of reliability with the CDSSII Scale (Macauley, Duncan & Russell, 1992). During this pilot study, the Cronbach's alpha (1951) for all subscales of attribution was unsatisfactory: externality $\alpha = .60$, locus of control $\alpha = .25$, personal control $\alpha = .20$ and stability $\alpha = .52$. The data also violated the Levene's

assumption of homogeneity for every subscale except stability. However, there are some interesting patterns that emerged in the results of the pilot study, and I am interested to see if they remain present in the full-study. Two interesting results were in the personal control and stability subscales. The mean for women in the personal control subscale was higher than the mean for men. This was true for women in total, and also for women in the 0 - 5 and 6 - 10 and categories of years playing golf. The 16 + years category was the only category that men scored higher than women for personal control. This result is expected as golf is very difficult and new golfers mostly experience failure. If we assume that for the first 10 years (or more) a golfer feels frustrated and does not perceive one's performance as successful, attributions golfers make will be in relation to a failing performance. In line with other attribution studies, women make more internal attributions for poor performances than men. These attributions are maladaptive and lead to less motivation (Schunk, 1983). In contrast, male and female golfers scored similarly internal attributions for the cohort of golfers playing longer than 16 + years. Again, this is consistent with prior studies. If a golfer has played for 16 + years there is an assumption that the player experiences sufficient satisfaction with his or her performance to continue playing for such an extended length of time. More expert (or satisfied) players are expected to make more adaptive internal attributions (Anshel & Mansori, 2005). Women also had a higher mean for locus of control attributions. My interpretation of this is similar to my interpretation of the personal control means.

Personal control attributions and stability attributions had similar patterns. Women scored the same for stability in the 0 - 7 year cohort and higher in the 6 - 10 year and 11 - 15 year cohorts. Again, these results are not surprising and consistent with maladaptive attributions women may make for a failing performance (internal and stable).

In this pilot study, women golfers had a higher mean for external control for all cohorts (except the 16 + year cohort which was similar to the male golfers' mean). This result was not expected and is in contradiction with women's higher mean for personal control for cohorts 0 - 5 years and 6 - 10 years. I did expect male and female golfers'external attributions to be similar for the 11 - 15 years and 16 + years cohorts, but I did not expect the means to be higher for the 0 - 5 years and 6 - 10 years cohort.

The satisfaction with performance measure showed male golfers being more satisfied than female golfers. This result was expected considering level of satisfaction is related to attributions about performance (Roberts & Duda, 1984), and attributions are related to self-efficacy (Cleary & Zimmerman, 2001), and motivation (Schunk, 1986). These findings are in line with the phenomenon that more women give up golf than men. All golfers in the Pilot I study had taken golf lessons in the past so no distinction of results could be made with this variable.

The pilot study made me aware of some adjustments needed in the research design. Additionally, I learned that finding male and female golfers who have played golf for less than five years is difficult on the golf course. This is especially true for the female population as over 50% of players have given up

within a five-year time frame. Although my study collected data from a busy public facility, it is difficult to collect data from many golfers who have played golf for less than five years. Because of this concern, my data for the actual research study was collected at a driving range. Driving ranges are utilized by every level of golfer. Novices practice at a driving range when they are too intimidated to play on the course. For some novices (who do not continue playing golf) the driving range is the extent of their golf experience. By contrast, experienced players also use the driving range to either loosen up before a round of golf, work on their games after play, or hit balls when they do not have time to play on the golf course. More so than the golf course, the driving range represents every type of golfer and gives me the best possible chance of collecting data from women who have played golf less than five-years.

Another adjustment needed was with the CDSII attribution assessment scale (Macauley, Duncan & Russell,1992). Participants of the pilot study had voiced confusion about some questions. For example, question 12 of the CDSII scale asks “thinking about your golf performance today, is the cause something other people can regulate” (see Appendix A). Eight participants (out of 25) in the pilot study indicated they did not understand the question. The problem seemed similar to that experienced by Homsma and his colleagues, who changed every root of the question to “is the cause of the error something….” (Homsma et. al.,2007, p. 569). By making the same changes to the question in golf terms, the question would read “is the cause of my performance something other people can regulate?” This change was tested with a small group of golfers (10). Although

the question read better, it was still not clearly understood by an additional group of golfers asked. The problem with question 12 on the CDSII scale was symbolic of the overall problems with the scale that emerged in the pilot study. Consequently, I eliminated the locus of control domain and also one question from external control, one question from stability and one question from personal control. All questions that were eliminated were noticeably giving inconsistent scores within their respective subscales.

Chapter 4

Pilot Study II

Method

The purpose of the second pilot study was to test the changes I had made to the Causal Dimension Scale (CDSII) (Macauley, Duncan & Russell, 1992). The locus of control domain was eliminated and I removed one question from the remaining domains to improve the Cronbach's alpha (1951) of the CDSII scale. Pilot II was primarily a test of the amended scale and a review of the subsequent effect the scale changes had on the Cronbach's alpha

Participants. Twenty-five golfers participated in the Pilot Study II (18 male golfers and 7 female golfers). The level of expertise of participants in the second pilot study ranged from recreational beginner golfers to professional players. This number of male and female participants is consistent with the national overall participation rate of golfers by gender (males 76% and females 24%) according to Bedlitz (2009). One-hundred percent of golfers recruited completed the survey.

Participants in the second pilot study were golfers who I had instructed in the past and with whom I had an on-going professional relationship. The participants were not from one common geographic area, but were dispersed throughout the United States. I had previously discussed my research with many of the participants in the second pilot study. All golfers were over 18 years of age and had played golf from between 1 and 40 years. The majority of participants

(13) indicated they were between 51 - 60 years old. All participants were Caucasian.

Procedure. The golfers were contacted by email and asked to think about their last golf practice at the driving range and respond to the survey. The amended assessment was attached to the email and participants were asked to complete the assessment and return to me via email. All golfers completed the survey.

Measures. The Pilot II study consisted of two surveys and six additional demographic questions (see Appendix B and C for scales used). The demographic questions asked participants their age and gender. In addition, the following questions were asked; "what was your goal for your last practice session?" "Did you achieve your goal for your last practice session?" "Number of years you have played golf?" and "Have you ever taken a golf lesson?" These general questions were asked to better understand the goals of the golfers, their history and experience in golf.

The Revised Causal Dimensional Scale (CDSII) (Macauley, Duncan & Russell, 1992) –Amended. An amended version of the CDSII scale (Macauley, Duncan & Russell, 1992) was used to measure attribution golfers made about their performance. The scale instructs the participants to think about their golf performance and the cause of it. The participant then responded to 6 questions on a 1 - 9 likert type scale (1 = *not very likely*, 9 = *very likely*). The scale is divided into three subscales; personal control (internal), external control and stability. Each subscale is comprised of two questions. A participant's score can range from

2 - 18 for each subscale (See Appendix B). Totals for items in each sub-set are summed to produce each subscale score. For this Pilot Study II, I ran reliability analysis of the CDSII scale. The amended assessment had improved its reliability from the version used in Pilot I. The Cronbach's alpha (1951) for externality reliability $\alpha = .90$, personal control $\alpha = 0.75$ and stability $\alpha = .63$. Although the Cronbach's alpha for stability was not as high as desired, it was a reasonable measure and consistent in performance with other research that had used an amended version of the CDSII scale (Tagger and Neubert, 2004, Homsma, Van Dyck, De Gilder, Koopman and Elfring, (2007). The improvement in the Cronbach's alpha confirmed my decision to conduct the full study using an amended CDSII scale.

Self-Reaction Scale (Cleary, Kitsantas & Zimmerman, 2000). Golfers' satisfaction with their performance was measured using one item "satisfaction with performance" (See Appendix C). This item has been used in previous studies to measure self-satisfaction (Kitsantas & Zimmerman, 2002, Cleary & Zimmerman, 2001). Golfers were asked to think about their golf performance and indicate on a scale of 0 - 100 (in 10 point increments) how satisfied they were with their golf performance. Zero indicates *not at all satisfied* and 100 indicated *very satisfied*.

Results

Analysis of the data focused on answering the research questions. Independent t-tests were conducted to examine overall difference by gender for attribution subscales and levels of satisfaction. ANOVAs were conducted to

determine the relationship between gender, number of years playing golf and each of the dependent attribution variables (stability, personal control, external control and satisfaction). Descriptive statistics of the data is displayed in Table 12.

Table 12

Descriptive Statistics of Golfers' Attribution by Gender

	N	*M*	*SD*	Skewness	Kurtosis
Stability	25	9.92	4.13	-.34	-.76
Personal Control	25	13.88	3.45	-.05	-1.53
External Control	25	6.12	4.41	.84	-.51
Satisfaction	25	56.00	29.86	-.45	-1.44

Note: $N = 25$

Research question one. To address the question "do male and female golfers make different attribution for their performance?" I conducted independent sample *t*- tests to compare the mean difference of attribution subscale totals by gender. See Tables 13 - 15.

Table 13

Comparison of Stability Attributions of Golfers by Gender

	n	*M*	*SD*	Skewness	Kurtosis
Male	18	10.00	4.13	-.33	-.52
Female	7	9.71	4.46	-.45	-1.08

Note: $N = 25$. No significant differences were found.

Table 14

Comparison of Personal Control Attributions of Golfers by Gender

	n	*M*	*SD*	Skewness	Kurtosis
Male	18	13.56	3.38	.25	-1.69
Female	7	14.71	3.77	-.94	.21

Note: $N = 25$. No significant differences were found.

Table 15

Comparison of External Control Attributions of Golfers by Gender

	n	*M*	*SD*	Skewness	Kurtosis
Male	18	12.17	4.88	.13	-.51
Female	7	13.29	6.05	.91	.51

Note: $N = 25$. No significant differences were found.

Research question two. To address the question "is there a relationship between years playing golf and attributions golfers make?" I conducted ANOVA analyses to compare the mean difference of attribution subscales by gender and the amount of time the golfers have played golf (Tables 16 - 18).

Table 16

Analysis of Variance for Stability Attributions

Years playing	Male (*M*)	Female (*M*)
0 - 5 years	7.33	-
6 - 10 years	10.00	12.50
11 - 15 years	8.50	14.00
16 + years	11.00	7.25

Note: $N = 25$ (18 male and 7 female). $F(3,24) = .91$. Levene's test of equal variance = .74. No significant differences found.

Table 17

Analysis of Variance for Personal Control Attributions

Years playing	Male (*M*)	Female (*M*)
0 - 5 years	13.33	-
6 - 10 years	12.00	16.50
11 - 15 years	11.00	18.00
16 + years	14.36	13.00

Note: $N = 25$. $F(7,17) = .810$. Levene's test of equal variance $p = .11$. No significant differences found.

Table 18

Analysis of Variance for External Control Attributions

Years playing	Male (*M*)	Female (*M*)
0 - 5 years	7.33	-
6 - 10 years	5.00	8.50
11 - 15 years	8.5	8.00
16 + years	5.55	4.50

Note: $N = 25$. $F(7,17) = .34$. Levene's test of equal variance $p = .006$. No significant differences found.

Research question three. To address the question "do male golfers report higher levels of satisfaction than female golfers?" I conducted a one-tailed independent *t*-test to compare means of satisfaction between gender (Table 19).

Table 19

Descriptive Statistics for Satisfaction of Male and Female Golfers

	Male ($n = 25$)		Female ($n = 25$)			
	M	*SD*	*M*	*SD*	*t*	*p*
Satisfaction	56.66	30.29	54.29	31.01	.18	.86

Note: $N = 25$.

Research question four. To address the question "is there an interaction between gender and years playing golf on attributions?" I conducted a 2 (gender – male or female) x 4 (years playing golf – 0 - 5, 6 - 10, 11 - 15, 16 +) ANOVA. There was a non-significant interaction between gender and years playing golf, on

stability attributions, $F(6,18) = 1.79$, $p = .19$. The overall model accounted for about 2% of the variance ($R^2 = .23$, Adjusted $R^2 = -.02$).

There was a non-significant interaction between gender and years playing golf on personal control attributions, $F(6,18) = .411$, $p = .74$. The overall model accounted for about 19% of the variance ($R^2 = .16$, Adjusted $R^2 = -.19$).

There was a non-significant interaction between gender and years playing golf on external control attributions, $F(6,18) = 2.05$, $p = .15$. The overall model accounted for about 5% of the variance ($R^2 = .21$, Adjusted $R^2 = -.05$).

There was a non-significant interaction between gender and years playing golf, on locus of control attributions, $F(7,17) = .33$, $p = .72$. The overall model accounted for about 19% of the variance ($R^2 = .10$, Adjusted $R^2 = -.19$).

Research question five. To address the question "is there an interaction between gender and satisfaction on attributions?" I conducted a 2 (gender – male or female) x 2 (satisfaction – satisfied or unsatisfied) ANOVA. The scores for reported satisfaction of golf performance were categorized as satisfied or non-satisfied. Scores of 0 - 50 were considered non-satisfied and 60 - 100 were considered satisfied. There was a non-significant interaction between gender and satisfaction, on stability attributions, $F(3,21) = 3.50$, $p = .07$. The overall model accounted for about 19% of the variance ($R^2 = .29$, Adjusted $R^2 = .19$).

There was a non-significant interaction between gender and satisfaction on personal control attributions, $F(3,21) = .16$, $p = .69$. The overall model accounted for about 8% of the variance ($R^2 = .06$, Adjusted $R^2 = -.08$).

There was a non-significant interaction between gender and satisfaction on external control attributions, $F(3,21) = .78$, $p = .39$. The overall model accounted for about 10% of the variance ($R^2 = .04$, Adjusted $R^2 = -.10$).

There was a non-significant interaction between gender and satisfaction, on stability attributions, $F(3,21) = .02$, $p = .89$. The overall model accounted for about 9% of the variance ($R^2 = .04$, Adjusted $R^2 = -.09$).

Discussion

After running two pilot studies I am confident that using a golf specific scale is more reliable than the original full and amended scale used in the two pilot studies (Macauley, Duncan & Russell, 1992). Although the Cronbach's alpha (1951) for the scale is acceptably reliable by extracting the locus of control domain and one question from the remaining subscales, (externality reliability $\alpha = .90$, personal control $\alpha = .75$ and stability $\alpha = .63$), this reduces the scale to just two items for each sub-domain.

I am also confident that changing the operation of the study to collect data at the driving range, rather than the golf course, yields more participation by golfers across the full-spectrum of players.

The second pilot study lacked a female participant in the 0 - 5 years playing golf category. The findings from the Pilot II study were also difficult to interpret. The participants were biased due to my prior relationship with them. Again, some of the more interesting patterns from Pilot Study I remained in Pilot Study II. Similarly to the Pilot Study I, female golfers reported higher personal control scores than men in the 6 - 10 years and 11 - 15 years categories. Only in

the 16 + years category did male golfers score higher than female golfers. This pattern was found in the stability subscale of attribution also. These findings are consistent with my hypothesis that the attrition rate for women in golf can be examined with maladaptive attributions (internal and stable) that women make for failing performances.

The satisfaction with performance again showed male golfers being more satisfied than female golfers. This result was again expected considering more women give up golf than men. All golfers in the Pilot Study II had taken golf lessons in the past so no distinction of results could be made concerning golf lessons.

Chapter 5

The Current Study

Research Questions

The goal of my research was to look at the motivation of women golfers. Based on the previously discussed research, my hypothesis was that attributions of male and female golfers differ significantly leading to reduced motivation of female recreational golfers. To test this hypothesis the current study will address six research questions (see Table 20).

Table 20

Research Questions for Final Study

Research questions
1. Is there a relationship between golfers' satisfaction with performance and perceived success?
2. Do male and female golfers make different attributions about their performance?
3. Are years playing golf a predictor of attributions made by golfers?
4. Do male golfers report higher levels of satisfaction with their performance than female golfers?
5. Do male golfers report higher levels of success with their performance than female golfers?
6. Is there an interaction between success and number of years playing golf for attribution sub-scores of male and female golfers?

Method

As a result of the pilot studies, the design of my final study changed. The instruments used to measure causal attributions in Pilot I and II were not sufficiently capturing the attributions of how golfers reacted after their practice sessions. Because of this, I developed an instrument intended to specifically capture attributions of golfers. In the final study I was also interested in examining the differences between golfers' satisfaction with performance and their perceived success of the performance. Perceived success of the participants was measured in the final study as well as level of satisfaction of the golfers.

Participants. Two-hundred and forty golfers participated in the study (153 male golfers and 87 female golfers). Participants in the study were recreational golfers who practiced at City of Phoenix golf facilities in Phoenix, Arizona. As with the pilot studies, public facilities were chosen because it is believed these facilities are more likely to be where golfers of all abilities and experience practice – including beginner golfers. Relative to the overall participation rate of golfers by gender – male golfers account for 76% of golfers and females account for 24% of golfers (Bedlitz, 2006), female golfers in this study were oversampled. Female golfers in the current study accounted for 36.25% of participants. Approximately 70% of golfers asked completed the survey. This participation rate was lower than in the pilot studies and may be partly due to golfers rushing from the driving range to the tee, and also the high temperatures during the time data was collected. Once golfers had finished their practice sessions they did not want to spend more time in the heat. Seventy seven

golfers in the study indicated they were between 51-60 years old. This age group contained the largest number of participants in the study.

Procedure. Data was collected from recreational golfers after they used practice facilities at the public golf courses in Phoenix, Arizona. Participation was optional and there was no compensation offered for participation. (See Appendix C, E and F for instruments used and Apendix G for Office of Research Integrity and Assurance exempt certificate). Golfers were informed that the data collection was for a study at Arizona State University to investigate how golfers explain the cause of their golf performance.

Measures. The study consisted of two scales, a survey and six additional general questions (see Appendix C, D and F for scales used). The general questions asked participants their age and gender. In addition, the following questions were asked; "what was your goal for your last practice session?" "Did you achieve your goal for your last practice session?" "Number of years you have played golf?" and "Have you ever taken a golf lesson?" These general questions were asked to better understand the goals of the golfers, their history and experience in golf.

Golfers Attribution Scale (Shapcott &Husman, 2010). This scale was developed to measure attributions golfers made about their performance (see Appendix D). The Causal Dimension Scale II (Macauley & Russell, 1992) was adapted based on feedback from Pilot I, Pilot II and Shapcott's golf expertise. The scale instructed golfers to think about their golf performance and the cause of it. The participants then responded to 18 questions on a 1 - 9 likert type scale (1 =

not very likely, 9 = *very likely*). The scale was divided into three subscales of attributions: internal, external and stability. Each subscale was originally comprised of six questions. However, because the scale was previously untested it was written with the intention of discarding items that were unreliable or that loaded poorly in factor analysis. After weak items were discarded, each subscale was reduced to three items. See Appendix E for the final items used in the scale. A participant's score could range from 3 - 27 for each subscale. Totals for items in each subscale were summed to produce each subscale score. The Cronbach's alpha (1951) for the subscales were $\alpha = .56$ for stability, $\alpha = .56$ for internal control and $\alpha = .64$ for external control. Although $\alpha = .56$ to $\alpha = .64$ are low scores these scores are higher than for the scale used in pilot one. The Cronbach's alpha for the scale used in pilot one was $\alpha = .52$ for stability, $\alpha = .25$ for locus of control, $\alpha = .20$ for personal control and $\alpha = .60$ for external control.

Self-Reaction Scale (Cleary, Kitsantas & Zimmerman, 2000). Golfers' satisfaction with their performance was measured using one item "satisfaction with performance" (Appendix C). This item has been used in previous studies to measure self-satisfaction (Kitsantas & Zimmerman, 2002, Cleary & Zimmerman, 2001). Golfers were asked to think about their golf performance and indicate on a scale of 0-100 (in 10 point increments) how satisfied they were with their golf performance. Zero indicates *not at all satisfied* and 100 indicated *very satisfied*.

Success Scale (Shapcott & Husman, 2010). Golfers were asked to indicate the perceived success of their practice session using a one item "success of performance." Golfers were asked to think about their golf practice and

indicate on a scale of 1-100 (in 10 point increments) how successful they perceived their practice to be. Zero indicates *not at all successful* and 100 indicated *very successful.* (Appendix F.)

Results

Analysis of the data focused on answering the research questions. Independent samples *t*-tests were conducted to examine overall difference by gender for levels of satisfaction and perceived success. Bivariate and partial correlations were used to explore the relationship with years played and attributions made by golfers. Multiple regression analysis was used to examine the interactions between success and years playing golf on attributions for both male and female golfers. The multiple regression models also served to evaluate unique variance explained by independent variables.

Research question one. To address the question "is there a relationship between golfers' satisfaction with performance and perceived success?" I conducted a bivariate correlation analysis to look at the relationship between golfers' reported satisfaction with their practice session and their perceived success. See Table 21. A strong, positive correlation was found. All subsequent analyses used perception of success, not level of satisfaction as an indicator of golfers' success.

Table 21

Correlation between Golfers' Satisfaction and Perceived Success

	N	*M*	*SD*	Success	Satisfaction
Success	240	69.88	18.91	-	.91**
Satisfaction	240	71.30	19.18	.91**	-

** Pearson correlation is significant at $\alpha = .01$ level (2-tailed).

Research question two. To address the question "do male and female golfers make different attributions about their performance?" I conducted a one-tailed independent samples *t*-test to compare the mean scores of internal, external and stability attributions by gender. See Table 22. The mean scores of the external attributions subscale for female golfers were significantly larger than by male golfers ($p = .009$). The mean score of the stability attributions subscale for female golfers were larger than the mean score of male golfers but the mean difference was not statistically significant ($p = .05$). The mean score of the internal attributions subscale for female golfers were practically identical as those made by male golfers ($p = .11$).

Table 22

Mean Comparisons of Attribution Scores by Gender

	Male					Female				
	n	*M*	*SD*	Skew	Kurtosis	*n*	*M*	*SD*	Skew	Kurtosis
I	145	18.85	4.53	-.53	-.28	85	18.10	4.58	-.08	-.24
E	150	6.29	4.12	1.24	.64	84	7.69*	4.58	1.05	.62
S	144	11.11	5.09	.35	-.68	86	12.29	5.06	.27	-.50

Note: I = Internal Attribution Score, E = External Attribution Score, S = Stability Attribution Score. * is significant at $p < .05$

Research question three. To address the question "are years playing golf a predictor of attributions made by golfers?" a zero-ordered and partial correlation coefficients were computed for male and female golfers. The correlation between years playing golf and mean scores for attribution sub-scores were computed holding constant the success scale (see Table 23). For female golfers there was a positive and significant partial correlation (holding constant perceived success) between years playing golf and the internal attribution score. For male golfers there was a negative and significant partial correlation (holding constant perceived success) between years playing golf and the external attribution score. The bivariate correlation between years playing golf and stability was non-significant and remained non significant for both male and female golfers.

Table 23

Correlations Between Years Playing and Attribution Scores

Measures	Zero-order correlations		Partial correlations controlling for success	
	Male	Female	Male	Female
Internal	.10	.27*	.11	.24*
External	-.18*	-.16	-.18*	-.17
Stability	.07	-.01	.07	.01

Note: $N = 240$. * Significance at $p < .05$.

An independent samples *t*-test was conducted to examine if the mean number of years playing golf was significantly different for male and female golfers (Table 24). Male golfers in this study had played golf for significantly more years than female golfers.

Table 24

Mean Comparisons of Years Playing Golf by Gender

	Male ($n = 153$)		Female ($n = 87$)			
	M	*SD*	*M*	*SD*	*t*	*p*
Years play	21.60	14.48	13.68	12.79	4.24	.001*

Note: $N = 240$. * Significance at $p < .05$.

Controlling for success, women golfers' internal attribution scores are positively correlated with the number of years playing golf and male golfers'

external attribution scores are negatively correlated with the number of years playing golf.

Research question four. To address the question "do male golfers report higher levels of satisfaction with their performance than female golfers?" I conducted a two-tailed independent samples *t*-test to compare the mean score of perceived satisfaction by gender. Male golfers report significantly greater levels of satisfaction than female golfers. See Table 25. Female golfers perceive themselves as significantly less successful than male golfers.

Table 25

Mean Comparison of Golfers' Satisfaction Level by Gender

	Male (n = 153)		Female (n = 87)			
	M	*SD*	*M*	*SD*	*t*	*p*
Satisfaction	73.41	18.29	67.59	20.23	2.28	.01*

Note: N = 240. * Significance at $p < .05$.

Research question five. To address the question "do male golfers report higher levels of success with their performance than female golfers?" I conducted a two-tailed independent samples *t*-test to compare the mean score of perceived success by gender. Male golfers report significantly greater levels of perceived success. See Table 26.

Table 26

Mean Comparison of Golfers' Success by Gender

	Male (n = 153)	Female (n = 87)

	M	*SD*	*M*	*SD*	*t*	*p*
Success	72.16	17.39	65.86	20.83	2.39	.01*

Note: $N = 240$. * Significance at $p < .05$.

Research question six. To address the question "is there an interaction between success and number of years playing golf for attribution scores of male and female golfers?" I conducted a hierarchical multiple regression analysis with success and years playing golf as predictors of each attribution subscale score for both male and female golfers. I then entered an interaction term to see if the reported attribution score was moderated by time playing golf and perceived success. This analysis was conducted for male and female golfers.

Female golfers' analyses. The variance and interaction was first analyzed for the internal attributions subscale. The success variable was entered first, and predicted a significant amount of variance in the internal attribution score of female golfers $F(1,83) = 16.06$, $p < .001$, $R^2 = .16$, Adjusted $R^2 = .15$.See Table 27. The number of years playing golf was entered next and both success and years playing golf together accounted for approximately 19% of the variance of internal attributions made by female golfers, $F(2,82) = 10.86$, $p < .001$, $R^2 = .21$, Adjusted $R^2 = .19$. The success*years interaction term was entered next and predicted a non-significant change in the internal attribution model $t(81) = -1.32$, $p = .19$, $R^2 = .02$.

Table 27

Predictors of Internal Attribution Score for Female Golfers

Models	*B*	*(SE B)*	β	Δ R^2
Step 1.				.16**
Success	.09	.02	.40**	
Step 2.				.05*
Success	.08	.02	.37**	
Years playing golf	.08	.04	.22*	
Step 3				.02
Success	.07	.02	.34**	
Years playing golf	.07	.04	.21*	
Interaction success*years	-.002	.002	-.13	

N = 85. $p < .05$, $^{**}p < .01$.

The variance and interaction was then analyzed for the external attributions subscale. The success variable was entered first, and predicted a non-significant amount of variance in the external attribution score of female golfers $F(1,84) = .49$, $p = .48$, $R^2 = .06$, Adjusted $R^2 = -.06$. See Table 28. The number of years playing golf was entered next and both success and years playing golf together accounted for approximately 1.1% of the variance of external attributions made by female golfers, $F(2,83) = 1.48$, $p = .23$, $R^2 = .04$, Adjusted $R^2 = .01$. The success*years interaction term was entered next and predicted a non-significant change in the external attribution model for female golfers, $t(82) = -.16$, $p = .87$, $R^2 = .00$.

Table 28

Predictors of External Attribution Score for Female Golfers

Models	*B*	*(SE B)*	β	Δ R^2
Step 1.				.01
Success	.02	.02	.08	
Step 2.				.03
Success	.02	.02	.10	
Years playing golf	-.06	.04	-.17	
Step 3				.00
Success	.02	.03	.09	
Years playing golf	-.06	.04	-.17	
Interaction success*years	.00	.002	-.02	

N = 86.

The variance and interaction was then analyzed for the stability attributions subscale The success variable was entered first, and predicted a non-significant amount of variance in the stability attribution score of female golfers $F(1,82) = 2.63$, $p = .11$, $R^2 = .03$, Adjusted $R^2 = .02$. See Table 29. The number of years playing golf was entered next and both success and years playing golf together accounted for approximately .7% of the variance of stability attributions made by female golfers, $F(2,81) = 1.31$, $p = .28$, $R^2 = .03$, Adjusted $R^2 = .01$. The success*years interaction term was entered next and predicted a non-significant change in the stability attribution model for female golfers, $t(82) = 1.04$, $p = .30$, $R^2 = .01$.

Table 29

Predictors of Stability Attribution Score for Female Golfers

Models	*B*	*(SE B)*	β	Δ R^2
Step 1.				.03
Success	-.04	.03	-.18	
Step 2.				.00
Success	-.04	.03	-.18	
Years playing golf	.01	.04	.02	
Step 3				.01
Success	-.04	-.03	-.16	
Years playing golf	.01	.04	.03	
Interaction success*years	.002	.002	.12	

N = 84.

Male golfers' analyses. The variance and interaction was first analyzed for the internal attributions subscale. The success variable was entered first, and predicted a significant amount of variance in the internal attribution score of male golfers $F(1,143) = 10.40$, $p < .002$, $R^2 = .07$, Adjusted $R^2 = .06$.See Table 30. The number of years playing golf was entered next and both success and years playing golf together accounted for approximately 6.8% of the variance of internal attributions made by male golfers, $F(2,142) = 6.22$, $p < .003$, $R^2 = .08$, Adjusted $R^2 = .07$. The success*years interaction term was entered next and predicted a non-significant change in the internal attribution model $t(141) = 1.34$, $p = .18$, $R^2 = .01$.

Table 30

Predictors of Internal Attribution Score for Male Golfers

Models	*B*	*(SE B)*	β	Δ R^2
Step 1.				.07**
Success	.07	.02	.26**	
Step 2.				.01
Success	.07	.02	.27	
Years playing golf	.04	.03	.11	
Step 3				.01
Success	.06	.02	.22*	
Years playing golf	.03	.03	.09	
Interaction success*years	.002	.001	.12	

N = 145. *$p < .05$, **$p < .01$.

The variance and interaction was then analyzed for the external attributions subscale. The success variable was entered first, and predicted a significant amount of variance in the external attribution score of male golfers $F(1,142) = .02$, $p = .90$, $R^2 = .00$, Adjusted $R^2 = -.01$. See Table 31. The number of years playing golf was entered next and both success and years playing golf together accounted for approximately 2% of the variance of external attributions made by male golfers, $F(2,141) = 2.49$, $p = .08$, $R^2 = .03$, Adjusted $R^2 = .02$. The success*years interaction term was entered next and predicted a non-significant change in the external attribution model for male golfers, $t(140) = .97$, $p = .33$, $R^2 = .00$.

Table 31

Predictors of External Attribution Score for Male Golfers

Models	*B*	*(SE B)*	β	Δ R^2
Step 1.				.00
Success	.003	.02	.11	
Step 2.				.03*
Success	.002	.02	.01	
Years playing golf	-.05	.02	-.18*	
Step 3				.01
Success	.06	.02	.22*	
Years playing golf	.03	.03	.09	
Interaction success*years	.002	.001	.12	

N = 86. *$p < .05$

The variance and interaction was then analyzed for the stability attributions subscale. The success variable was entered first, and predicted a non-significant amount of variance in the stability attribution score of male golfers $F(1,148) = 1.09$, $p = .30$, $R^2 = .01$, Adjusted $R^2 = .001$. See Table 32. The number of years playing golf was entered next and both success and years playing golf together accounted for approximately .1% of the variance of stability attributions made by male golfers, $F(2,147) = .92$, $p = .40$, $R^2 = .01$, Adjusted $R^2 = -.001$. The success*years interaction term was entered next and predicted a non-significant change in the stability attribution model for male golfers, $t(146) = .53$, $p = .60$, $R^2 = .002$.

Table 32

Predictors of Stability Attribution Score for Male Golfers

Models	*B*	*(SE B)*	β	Δ R^2
Step 1.				.01
Success	-.03	.03	-.09	
Step 2.				.01
Success	-.03	.03	-.08	
Years playing golf	.03	.03	.07	
Step 3				.00
Success	-.03	.03	-.10	
Years playing golf	.02	.03	.06	
Interaction success*years	.001	.002	.05	

N = 150.

Table 33 displays a summary of variance attribution scores accounted for by perceived success, years playing golf, perceived success and years playing golf and the significance of an interaction term of years*success.

Table 33

Predictors of Attribution Scores for Male and Female Golfers

	Male golfers R^2			Female golfers R^2		
	Internal	External	Stability	Internal	External	Stability
Predictors						
Success	.07**	.00	.01	.16**	.06	.03
Years	.01	.03	-.05	.05*	.03	.00
Success and Years	.08**	.03	.01	.21**	.04	.03
Success*Years	.02	.00	.01	.01	.00	.00

*$p < .05$, **$p < .01$

Chapter 6

Discussion

This research was intended to address the broad question of why female recreational golfers give up the game at twice the rate of male recreational golfers. I used Weiner's (1986) attribution theory to frame this question. My hypothesis was that female golfers make significantly more maladaptive attributions for their performance than male golfers, and those attributions have the subsequent effect of decreasing their motivation to continue playing golf. This study supports a hypothesis that recreational male and female golfers do make different attributions about their golf performances. In trying to explain why the attrition rate of female golfers is greater than male golfers – when both genders have chosen to play – attribution theory presents a framework that suggests a difference between the genders.

As previously demonstrated by Roberts & Duda, 1984, Anshel & Mansori, 2005, and Biddle & Hill, 1988), the perceived success of a performance is relevant to the interpretations of causal attributions. Because of this, a measure of success was required for this study. In the preliminary pilot studies, satisfaction with performance was used to assume the perceived level of success with performance. I wanted to verify if satisfaction as a concept differed from perceived success reported by golfers. To achieve this I measured both satisfaction with performance and perceived success of the performance in the final study. The correlation between satisfaction with performance and perceived

success was strong and positive. Based on this finding, I used the perceived success scale instead of the satisfaction scale as an indicator of performance.

Using success as a measure of performance, male golfers reported a significantly higher level of success than females. A perception of success can increase self-efficacy and motivation. A perception of success is related to self efficacy (Cleary & Zimmerman, 2001), and subsequent motivation (Schunk, 1986). Because women golfers interpreted the success of their golf performance so differently than male golfers, a median split of success scores was not an appropriate way to analyze the data. In the final study I analyzed the data as a whole with no successful and unsuccessful category.

My hypothesis that male and female golfers make significantly different attributions is supported by one subscale of attribution scores made by golfers in the study. After a practice session, female golfers scored significantly higher on the external attributions scale than male golfers and female golfers also scored significantly lower on the perceived success scale. External attributions after a less successful performance protect self-efficacy of the golfer in the short-term because the performance is not seen as a reflection of the individual. But these attributions are motivationally maladaptive because external attributions are generally not controllable. In the current study, the attribution scale items that measured external attributions were “to what extent was your performance affected by bad clubs?” “to what extent was your performance affected by luck?” and “to what extent was your performance affected by poor equipment?” As suggested in the literature review, a golfer has no control over luck, and golfers,

especially beginner golfers, may not feel they have control over the clubs and equipment they use. Golf equipment is expensive, and a lack of control over clubs or equipment may emanate from not wanting, or being able, to invest in good equipment. However, the controllability element of these attribution items is only assumed and is yet to be tested. A golfer may have less motivation to continue playing if the performance is unsuccessful and she does not perceive the cause to be controllable.

Stability attributions scores of female golfers were higher than male golfers, but not quite significant (p = .05). Scoring higher for stability attributions after an unsuccessful performance is also maladaptive – as motivation will be reduced if the golfer does not expect an unsuccessful performance to improve.

Because the attrition rate of female golfers is highest during the first five years of taking up the game (National Golf Foundation, 2006), I wanted to explore whether time is a predictor of attributions female golfers make. Controlling for success, the number of years playing golf is a significant predictor for the internal attribution score of female golfers. For every year a female plays golf her score on the internal attribution scale is predicted to increase by .08 points. Although these findings suggest that women golfers' attributions get more adaptive the longer she plays – her attributions start changing from external to internal which generally means that her attributions will change from uncontrollable to controllable – I am unable to know if this finding is because attributions change over time, or if only women golfers with adaptive internal attributions have continued to play golf. The directionality of this relationship is

unknown but an increase in the control dimension of attributions will increase her motivation to persist at a task (Weiner, 1986).

The perception of success was also a significant predictor of internal attributions made by golfers in the study. For every one unit of perceived success reported by a female golfer, the predicted score on the attribution scale increased by .09. This finding supports a belief that the more successful a female golfer feels, she will make internal attributions for her performance. These findings mirror those of Anshel and Mansori (2005) who induced perception of success on athletes. Those athletes who believed their performance was successful made internal attributions and those who believed their performance was unsuccessful made external attributions. The differences were statistically significant. Similar findings between attributions of successful and unsuccessful athletes were reported by Biddle and Hill (1988).

The results in this study did not support a hypothesis that there would be a significant interaction between success and time playing for any subscale of attributions made by either male or female golfers. However, the regression models supported previously reported findings that perceived success of the golfers and amount of time playing were significant predictors of internal attributions for both male and female golfers.

Only 16 golfers in this study had never taken a golf lesson. Considering this small number of non-lesson takers, the results are difficult to interpret and have not been formally reported. However, based on the limited number of non-lesson taking participants in the study, there was no difference between the

attributions made by golfers who have taken lessons and golfers who have not taken lessons.

The relevance of this study

This study found that recreational female golfers perceive their performance as less successful than male recreational golfers, and that female golfers make maladaptive attributions for this performance. These finding are of great interest to motivation researchers studying adult participants in recreational sports, and also the golf industry.

Attribution theorists have studied elite athletes (Morgan, Griffin & Hayward, 1996, Holt & Morley, 2004), but little research exists on the causal attributions of recreational athletes. This research adds to the research on recreational athletes. Specifically, this research suggests that women athletes' lower perception of success, and the maladaptive attributions they make for their performance may contribute to a lower participation rate than recreational male athletes.

The construct of perceived success in terms of recreational sport is also of interest to researchers. Golf, by nature, is a difficult game for recreational golfers regardless of one's gender. The significant difference in success reported by male and female golfers should be explored further – do the genders really perform so differently, or is the construct of success interpreted differently by male and female golfers? Does the male gendered golf environment increase the risk of stereotype threat for female golfers – contributing to female golfers' perception of success being less than that perceived by male golfers? Do women golfers set

unrealistic goals for their performance that reduce their perception of success? Further research is needed to explore the construct of success for recreational golfers and why they perceive their performance so differently.

The golf industry acknowledges the problematic attrition rate of female golfers (Bedlitz, 2009), but offers no remedy. This study serves as a starting point for the golf industry to empirically explore why female golfers do not have the motivation to continue playing golf. The findings of this study suggest that male and female golfers make different attributions that subsequently affect their motivation to continue playing. Causal attributions in golfers are changeable (Rascale, Le Foll, & Higgins, 2006) so this research gives the golf industry an instrument to affect female golfers' attributions to play. As a percentage, female golfers take more golf lessons than male golfers (AMF, 2009). If golf instructors are able to retrain attributions of female golfers, the golf industry may be able to use this as a tool for retaining the participation of women golfers.

Where does this research lead?

Further research should be conducted on the causal attributions made by other recreational athletes in sports where female participation is low. I am interested to explore whether the differences in attributions exist in sports that have a male gendered environment, or if the difference also exists in sports with an equitable environment. In addition, future attribution research should involve an intervention to retrain attributions made after a performance. As demonstrated by Rascale, Le Foll, & Higgins (2006), attributions made by golfers can be retrained even after a simple putting exercise. A similar experiment should be

conducted with golf instructors providing an intervention with recreational female golf players. The golf instructor should be trained to make adaptive attributions for the golfers' performance and the intervention should continue over multiple sessions.

In addition, future research should examine the perception of success for male and female recreational golfers. Performance goals of recreational male and female golfers should be studied to establish if they vary by gender. It is also of interest to explore if male and female golfers interpret the same performance, relative to the same goal, differently in terms of how successful that performance is perceived.

Limitations of the study

This study was successful in recruiting a large number of recreational golfers as participants. The research would have more power with a psychometric scale shown to be more reliable. As previously discussed, the scales used in the two pilot studies (Macauley, Duncan & Russell, 1992) were not sufficiently reliable to use in the final study and so an attribution scale custom-made for golf was developed for the final study. Although I considered the final attribution scale (Shapcott & Husman, 2010) more reliable than the previously used scale, it was not fully satisfactory. Because the scale used in the study was not psychometrically tested, we cannot say for certain that the scale captured the intended attributions of the golfers who participated in the study. Further research that measures the attributions of recreational golfers should use a scale that has shown good reliability and validity.

Other recent work researching attributions in sport has used qualitative methods to capture participants' attributions (Kitsantas & Zimmerman, 2002, Cleary & Zimmerman,2001). Similar methods should be considered for studying the attributions of recreational golfers in the future.

Conclusion

Even though the scale used to measure golfers' attributions limits the validity of this study, some findings are interesting and offer support for a difference in causal attributions of recreational athletes by gender. In trying to understand the attrition rate of female recreational golfers, the maladaptive attributions women golfers made in this study should be further examined.

A gender difference was also found in the golfers' perception of success. Because golf is a difficult game for both recreational male and female golfers, this finding was not expected and is currently unexplained. There is a known relationship between perceived success and attributions (Anshel & Mansori, 2005 & Biddle & Hill, 1988), and perceived success and self-efficacy (Cleary & Zimmerman, 2001). The construct of success and the disparity of success between male and female recreational golfers should be examined further.

This research clarified problems that have previously been identified in measures of attributions. Measures used in academic attribution research have historically not performed well when used in athletic settings. This research confirms the need for a sport or athletic specific measure for attribution research in athletic domains. Additionally, by recognizing the relationship between

perceived success and satisfaction with performance, this research clarified that the relationship between the two constructs is very strong.

This research will provide the foundations for future studies exploring attributions of recreational athletes. It has illuminated a need for a sport specific attribution measure, and it has established a building block to continue researching attributional gender differences in recreational athletes. It is hoped that future research will contribute to a greater understanding of why the attrition rate of female recreational golfers is twice the rate of male recreational golfers.

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APPENDIX A

CAUSAL DIMENSION SCALE II

MACAULEY, DUNCAN & RUSSELL, 1992

Think about your golf performance today and the cause of the performance. The items below concern your impressions or opinions of this cause or causes in your performance. Circle one number for each of the following questions*:*

Is the cause(s) something:

1. That reflects an aspect of yourself	9 8 7 6 5 4 3 2 1	Reflects an aspect of the situation
2. Manageable by you	9 8 7 6 5 4 3 2 1	Not manageable by you
3. Permanent	9 8 7 6 5 4 3 2 1	Temporary
4. You can regulate	9 8 7 6 5 4 3 2 1	You can not regulate
5. Over which others have control	9 8 7 6 5 4 3 2 1	Over which others have no control
6. Inside of you	9 8 7 6 5 4 3 2 1	Outside of you
7. Stable over time	9 8 7 6 5 4 3 2 1	Variable over time
8. Under the power of others	9 8 7 6 5 4 3 2 1	Not under the power of others
9. Something about you	9 8 7 6 5 4 3 2 1	Something about others
10. Over which you have power	9 8 7 6 5 4 3 2 1	Over which you have no power
11. Unchangeable	9 8 7 6 5 4 3 2 1	Changeable
12. Other people can regulate	9 8 7 6 5 4 3 2 1	Other people cannot regulate

The total scores for each subscale are obtained by summing the items as follows: Locus of causality (1, 6 & 9), External control (5, 8 &12), Stability. (3,7 &11), Personal control (2,4 & 10).

APPENDIX B

CAUSAL DIMENSION SCALE II (AMENDED)

MACAULEY, DUNCAN & RUSSELL, 1992

Think about your golf performance today and the cause of the performance. The items below concern your impressions or opinions of this cause or causes in your performance. Circle one number for each of the following questions:

Is the cause(s) of your golf performance something that*:*

1. Is manageable by you	9 8 7 6 5 4 3 2 1	Is not manageable by you
2. Is permanent	9 8 7 6 5 4 3 2 1	Is temporary
3. Is something you can regulate	9 8 7 6 5 4 3 2 1	Is something you can not regulate
4. Is controllable by others	9 8 7 6 5 4 3 2 1	Is not controllable by others
5. Is stable over time	9 8 7 6 5 4 3 2 1	Is variable over time
6. Is under the power of others	9 8 7 6 5 4 3 2 1	Is not under the power of others

The total scores for each subscale are obtained by summing the items as follows: External control (4 & 6), stability (2 & 5), personal control (1 & 3).

APPENDIX C

SELF-REACTION SCALE

CLEARY, T., KITSANTAS, A.& ZIMMERMAN, B. (2000)

Satisfaction was assessed using with a single-item scale that ranged from 0-100 in 10-unit intervals. Written labels were offered for the following points: Each participant's score indicated how satisfied she was about her overall performance

10	20	30	40	50	60	70	80	90	100
Not at all satisfied			Somewhat satisfied			Pretty satisfied		Very satisfied	

APPENDIX D

GOLFERS ATTRIBUTION SCALE

SHAPCOTT, S. & HUSMAN, J. (2010)

To what extent was your performance affected by (please circle 1-9):

	Do not agree								Agree
1. Something you can influence?	1	2	3	4	5	6	7	8	9
2. A golf instructor?	1	2	3	4	5	6	7	8	9
3. A short-term injury?	1	2	3	4	5	6	7	8	9
4. Something you can change?	1	2	3	4	5	6	7	8	9
5. Something beyond your control?	1	2	3	4	5	6	7	8	9
6. Limitations you'll always have?	1	2	3	4	5	6	7	8	9
7. Something you always experience?	1	2	3	4	5	6	7	8	9
8. The golf balls?	1	2	3	4	5	6	7	8	9
9. Luck?	1	2	3	4	5	6	7	8	9
10. Natural talent?	1	2	3	4	5	6	7	8	9
11. Bad clubs?	1	2	3	4	5	6	7	8	9
12. Something unexpected?	1	2	3	4	5	6	7	8	9
13. Athleticism?	1	2	3	4	5	6	7	8	9
14. Other golfers on the range?	1	2	3	4	5	6	7	8	9
15. Lack of aptitude?	1	2	3	4	5	6	7	8	9
16. Poor equipment?	1	2	3	4	5	6	7	8	9
17. A swing problem you can't fix?	1	2	3	4	5	6	7	8	9
18. A short-term illness?	1	2	3	4	5	6	7	8	9

APPENDIX E

GOLFERS ATTRIBUTION SCALE II

SHAPCOTT, S. & HUSMAN, J. (2010)

To what extent was your performance affected by (please circle 1-9):

	Do not agree								Agree
1. Something you can influence?	1	2	3	4	5	6	7	8	9
2. Limitations you'll always have?	1	2	3	4	5	6	7	8	9
3. Something you always experience?	1	2	3	4	5	6	7	8	9
4. Luck?	1	2	3	4	5	6	7	8	9
5. Natural talent?	1	2	3	4	5	6	7	8	9
6. Bad clubs?	1	2	3	4	5	6	7	8	9
7. Athleticism?	1	2	3	4	5	6	7	8	9
8. Poor equipment?	1	2	3	4	5	6	7	8	9
9. A swing problem you can't fix?	1	2	3	4	5	6	7	8	9

The total scores for each subscale are obtained by summing the items as follows: External attributions (4, 6 & 8), stability attributions (2, 3 & 9), internal attributions (1, 5 & 7).

APPENDIX F

PERCEPTION OF SUCCESS SCALE

SHAPCOTT, S. & HUSMAN, J. (2010)

Perception of success was assessed using with a single-item scale that ranged from 0-100 in 10-unit intervals. Written labels were offered for the following points. Each participant's score indicated how successful she perceived her performance to be.

10	20	30	40	50	60	70	80	90	100
Not at all successful			Somewhat successful			Pretty successful		Very successful	

APPENDIX G

OFFICE OF RESEARCH INTEGRITY AND ASSURANCE APPROVAL

ARIZONA STATE UNIVERSITY
RESEARCH AND ECONOMIC AFFAIRS

Office of Research Integrity and Assurance

To: Jenefer Husman
EDB

From: Mark Roosa, Chair
Soc Beh IRB

Date: 01/19/2010

Committee Action: **Exemption Granted**

IRB Action Date: 01/19/2010

IRB Protocol #: 1001004711

Study Title: Sub-Par Attributions: Why Women Give Up Golf (Golfers and their attributions)
The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records