5-2010

A Behavioral Examination of Complementarity and Specialization

Laura Virginia Nelson
College of William and Mary

Follow this and additional works at: http://publish.wm.edu/honorstheses

A Behavioral Examination of Complementarity and Specialization

A thesis submitted in partial fulfillment of the
requirements for the degree of Bachelor of Science with Honors in
Psychology from the College of William and Mary in Virginia

By

Laura Virginia Nelson

Accepted for _____

_____
Dr. Constance Pilkington, Director

_____
Dr. Peter Vishton

_____
Dr. Inga Carboni

Williamsburg, VA
April 2010

Acknowledgements

Thank you to my advisor, Dr. Constance Pilkington, for taking me on as her honors student despite my inexperience in the social psychology field and lack of brilliant study concepts. She gave me direction without overshadowing, so over the course of the last year I have been able to grow as a psychologist in ways I never anticipated. My confidence in my ability to conduct meaningful research has increased exponentially due to her guidance and for that I am immeasurably grateful.

Thank you to Prof. Vishton and Prof. Carboni for serving on my Honors Committee, but also for the unique ways you have influenced my academic development at The College. Prof. Vishton gave me my first taste of research in psychology and inspired me to undertake this project. Prof. Carboni allowed me to take her Organizational Behavior and Management class in the Business School, which cemented my love for Organizational Psychology and contributed to my decision to attend Columbia University next year to earn my M.A. in Social Organizational Psychology.

Thank you to:
…my family for their constant support and uplifting words.
…Sam Monfort for hugs that squeezed out all my stress.
…my best friend, Laurel Slough, for tea time (almost) every night.
…my Belize team for always brightening my day and keeping me energetic.
…Patrick Carlson for endless comedic relief on g-chat.
…Phillip Walker for spending hours with me in the library analyzing my data in SPSS.
…Alexa Hoyne for the best Thursday lunches ever.
…Emily GM for flashing me her smile when I was grumpy.
…Jon Lee for driving me home from the library at 2am for weeks on end and for keeping the swag turned on.

One last gigantic thank you to anyone and everyone who helped me complete this thesis: Meredith Dost, Mary Laurie, Kelsey Conway, Lauren Russell, Ashley Post, Alyssa Wallace, Paige Roseman, Colleen Kennedy, Stephanie Burton, Claire Frederiksen, Emily Thiell, Hayley Grinder, and Cindy Hess. I could not have done it without all of your help! Thanks for the love and laughter!

Table of Contents

Abstract

In order to decrease competition and protect positive self-evaluation, people in romantic relationships will display complementarity, in which they cede performance areas that are high-relevance to one person and low in relevance to the other person to the high-relevance person. In performance domains that are high-relevance to both people within a couple, they display specialization, in which the domain is divided into sub-domains that are equally allocated within the couple. Previous research has used surveys and self-reports to observe these mechanisms. The purpose of this study was to observe specialization in romantic couples in a laboratory setting through the use of a version of Trivial Pursuit. Specialization and complementarity were not observed when the behavior of the romantic couples was compared to stranger pairs. However, gender effects as well as love and liking levels towards the partner were also correlated with frequency of complementarity. Future adjustments to Trivial Pursuit in order to encourage specialization were also considered as well as future directions for studying complementarity and specialization.

Introduction

Maintaining a positive self-image can be a challenging task in a world where everyone is moving at a breakneck speed and searching for the "next big thing." Competition drives people to work and study hard for success, even when it may be elusive. The difficulty of sustaining a positive self-image is compounded when people are involved in romantic relationships because not only must they make decisions that will benefit their own self-evaluation, they have to take their partner's evaluation into consideration as well. The success of the couple partially depends on their ability to make decisions that both parties agree with and do not harm either person's self-evaluation. This can be particularly difficult if both people in the relationship are striving towards the same goals or consider certain performance areas essential to their core identity. The competition could drive them apart, but in most cases, couples follow a predictable pattern that allows them to protect both their own and their partner's self-evaluation.

Tesser's (1988) Self-Evaluation Maintenance Model (SEM) outlines the pattern that people follow in order to maintain a positive self-evaluation, most simply defined as having a favorable view of oneself. The model assumes that people are motivated to maintain a positive self-evaluation and that one's relationships with others will have a significant impact on self-evaluation. There are two processes, reflection and comparison, which describe aspects of social relationships that can affect an individual's self-evaluation. Reflection refers to a situation where people bask in reflected glory and magnify another's achievements. For example, people are reflecting when they say, "My best friend is the fastest sprinter in the state" or "My niece is the author of a bestselling

book." They are raising their own self-evaluation by pointing out the closeness between themselves and the other person who is experiencing great success. Since the success is not directly related to the person's core identity, it is not a threat to see the close other thrive. Comparison refers to evaluating one's own performance against that of another; comparison can lead to either the maintenance of a satisfactory self-evaluation when one's performance is superior or a threat to self-evaluation when performance is inferior (Tesser, 1988). For example, positive comparison occurs when a person in a professional orchestra has a perfect audition and is assigned the first chair, ahead of his or her friends. The friends would experience negative self-evaluation because they were out-performed in a performance area they consider close to their core identity.

In addition, there are three components that determine if reflection, comparison, or neither will occur. The first is closeness, or the degree to which two people appear to be in a unit relationship. Family, proximity, age, friendship, and romantic relationships are examples of factors that can determine closeness. The closer a person is the more likely one is to engage in reflection or comparison. If there is no link between the two people, then it is unlikely that they would engage in reflection or comparison because the other person's actions would not affect their own self-evaluation. The second component is performance. In order to reflect, another's performance must be superior and in order to compare, another's performance must be significantly weaker or stronger. If the performance is identical or similar, then there is no reason to reflect or compare. The third component is relevance, or the degree to which an activity is close to one's self-identity. People's interests and goals determine relevance. For example, a chef would consider culinary performance close to his or her identity. Likewise, a professional soccer

player would consider superior soccer skills close to his or her identity and therefore, soccer is a high relevance performance area. When the relevance of a performance domain is low, people are more likely to engage in reflection. When relevance is high, the SEM model predicts that people will engage in comparison.

People will move all three variables (closeness, performance, and relevance) in directions that maximize gain and minimize loss in self-evaluation (Tesser, 1988). In a typical interaction, a task can be low-relevance to person A, who is close with person B, who in turn, regards the task as highly relevant to his or her self-identity. Paired with Person B's superior performance, person A will easily be able to reflect and increase self-evaluation through association. Person B, for whom the task is high-relevance, will be able to compare and increase his self-evaluation because of his superior performance.

Closeness, performance, and relevance are interdependent, with changes in one directly affecting changes in the other two variables. Performance is moderated by changes in closeness and relevance. When closeness and relevance are high, the SEM model predicts that people will hinder the performance of the close other in order to increase the benefits gained from positive self-evaluation through comparison (Tesser & Smith, 1980). People will also attempt to increase their own performance or their perception of their performance in order to avoid a loss in self-evaluation caused by negative comparison (Brazil, 2001). When closeness is high, but relevance is low, people are more likely to engage in reflection in order to bask in reflected glory of another's success. When closeness is low, people do not engage in reflection or comparison (Tesser, 1988).

The second factor, closeness, is affected by changes in performance and relevance. When people are outperformed by a close other in a highly relevant performance area, they will reduce closeness in order to avoid negative comparison and a loss in self-evaluation. If a performance domain is low relevance to a person, but they know a high-achiever in that domain, they will increase closeness with the high-achiever in order to maximize the benefits gained from reflection. A study by Pleban and Tesser (1981) verifies this phenomenon. After a high relevance task, participants were given either positive or negative feedback. They were then asked to sit next to the person they had been competing against. When the participant received positive feedback, they sat closer to their partner than when they received negative feedback. They reduced physical closeness with their opponent, mimicking their reduction in emotional closeness due to negative comparison.

The third factor, relevance, is influenced by changes in closeness and performance. In general, high performance tends to increase the relevance of a performance domain. If a performance domain is high relevance, but a person is repeatedly outperformed by a close other, he or she can reduce relevance of the domain in order to avoid negative comparison and a threat to his or her self-evaluation. The closer the other person is, the more likely they will lower the relevance of the performance domain to their self-identity. In this way, they are recognizing the other as the superior performer.

These three components can be seen interacting in a study by Tesser and Smith (1980), which looked at behavioral attempts to facilitate or hinder another's performance. Teams of two were composed of either friends or strangers and the task was to use clues

graded on difficulty to help the other person identify a word. Tesser and Smith manipulated relevance by telling participants that the task tested competence with the English language. Participants tended to hinder the other's performance (whether friend or stranger) by giving harder clues under high-relevance circumstances. Closeness did not play a large role because the participant giving the clues wanted to raise self-evaluation by out-performing the other person. Under low-relevance conditions (when participants were told the task did not measure anything), participants helped friends more than strangers by giving them easier clues. When the relevance of another's performance is low, the reflection processes will dominate comparison processes (Tesser, 1988). The participants giving the clues were more likely to help their friend than the stranger so that they could bask in reflected glory when their friend performed well.

There are several factors that have been studied that affect the strength of the SEM model. People who have chronic low self-esteem tend to show the effects of the SEM model more strongly than those who have high self-esteem. Those with chronic low self-esteem also feel more threatened when their self-evaluation is at stake than do people with high self-esteem. In other words, low self-esteem causes those who are experiencing negative comparison because of inferior performance to feel more of a blow to their self-evaluation (Beach & Tesser, 1995). Gender also plays a role in the SEM model. Wives are more likely to change their decision or action than husbands as a function of importance to the partner. They are more likely to accommodate their husband's positive self-evaluation maintenance by avoiding performance areas that can impact it negatively (Beach & Tesser, 1993). Also, women report being outperformed in their high and low-relevance performance areas more often than men do. Women are

more likely to cede their partner's high relevance areas in order to bask in reflected glory. Women are relatively more dependent on reflection for SEM needs within marriage and men are relatively more dependent on positive comparison in order to sustain a positive self-evaluation. This finding is in line with traditional gender roles (Beach, Tesser, Mendolia, et al., 1996).

One limitation of the SEM model is that it only focuses on the self-evaluation of one person. It ignores possible consequences and effects of one person's actions to protect his or her self-evaluation. These consequences could include harming a close other's self-evaluation, which would lead to conflicts over both people's SEM needs. Therefore, the model must be expanded to include how people in close relationships manage the needs of both people. Pilkington and Smith (2000) expanded the SEM model to include two close others, a romantic partner and same-sex friend. The participants rated their expertise and the relevance of 80 performance areas to their self-definition. When they were outperformed by both close others in a performance domain, they rated it lower in self-relevance. The converse was also true; when participants outperformed both close others the relevance of the domain was moderate or high. When outperformed by only one close other in a performance domain, relevance was reported to be low or moderate. If there were disagreements or uncertainty about performance, relevance was lowered in order to shield the participant's self-evaluation from threat. In general, when people see themselves as inferior to close others, they balance the potential threat to their self-evaluation by lowering the relevance of the performance domain to their self-identity (Pilkington & Smith, 2000).

Tesser & Smith's (1980) study with the word cues also showed that subjects had a more positive view towards their partners when they were given positive feedback that they performed well and more negative views when they were told they had performed poorly. One prefers others to be successful at and interested in performances areas one values, but never out-perform oneself at the task. Others can threaten a person's self-evaluation when they perform better in an area that is considered high-relevance to the individual. When a person's self-evaluation is threatened, they have three options. They can either reduce closeness with the person they are competing with, reduce the relevance of the task to their self-identity, or reduce the performance differential, for example by attributing the other's super performance to situational factors (Tesser, 1988). Reducing closeness reduces the strength of the comparison. Reducing relevance makes it easier for the inferior performer to reflect instead of compare. Reducing the performance differential distorts the perceived difference to make it less of a threat. By choosing any of these options, people can lower the threat to their self-evaluation.

In romantic relationships, these options become much trickier because not only must people consider their own self-evaluation, they must consider the self-evaluation of their partner as well. When the self is outperformed by the partner, self-evaluation is lowered significantly more than when the self is outperformed by a stranger (Beach el al., 2001). In addition, reducing closeness or the performance differential would probably lead to the end of the relationship. Instead, couples engage in complementarity. Only comparison with a romantic partner (as opposed to a stranger) prompts complementarity. Pilkington, Tesser, and Stephens (1991) surveyed participants on the relevance of 68 performance areas to their and their partners' self-identity. They found that all of the

subject areas that are high in relevance to one person and low-relevance to the other person are ceded to the one with high-relevance designation and they are allowed to prevail in those areas. Ceding performance areas to the partner in response to being outperformed is a relatively automatic process (Beach et al., 2001). When participants take into account their partners' self-evaluation, they are showing an empathetic comparison or reflection response. Participants were more likely to show an empathetic response when the performance area was high-relevance for one person and low-relevance for other person and as the length of the relationship increased (Beach et al., 2001). In this way, self-evaluation is maintained in both partners because they are allowed to excel at all of the tasks that are close to their self-identity (Pilkington et al., 1991). For example, if "sports" is a high-relevance performance domain for one person and a low-relevance area for the other person, the low-relevance person will allow the other to excel at sports in practice and knowledge without competition. The goal is for the low-relevance person to bask in the reflected glory of the other's success.

In high-relevance areas, participants report outperforming their partners and in low-relevance situations they report being outperformed by their partners. This creates a comparison effect for the high-relevance person and a reflection effect for the low-relevance person. In addition, the person who identified the performance area as high relevance was also identified as the better performer by both people in the relationship. The comparison process was relatively more important for males and the reflection process was relatively more important for females. In the Pilkington et al. (1991) study, for activities that were rated high-relevance for both partners, males were rated as outperforming females 63% of the time, while females were rated as outperforming

males 37% of the time. In addition, liking for the partner moderated the reflection or comparison processes. Those who liked their partner less showed stronger comparison and weaker reflecting tendencies.

The performance ecology approach is another method for describing how couples cope with competing goals (Beach et al., 1996). Each person in the couple maintains and displays a unique set of performance areas relative to their partner. The web of interconnected factors that support the development of specialized performance niches by each spouse is the couple's performance ecology. The coordination of effort and the emergence of specialized roles because of the ceding of performance areas based on relevance create a unique system within the couple. This system facilitates the comparison process for high-relevance situations for one person and the corresponding reflecting process for the other person. In one study, couples where one partner had been put in a negative comparison condition were less positive in their recollections of early relationship memories than were couples in which the outperformed spouse was in the positive reflection condition (Beach et al., 1996). The results suggest that spouses who are able to view a partner's better performance as an opportunity for reflection rather than comparison will experience more positive relationship outcomes. In addition, partners who want to stay together even though they have some uncertainty about their fit as a couple may adjust the relevance of some performance areas in order to decrease competition. Both people in romantic relationships tend to distort their perception of the degree of relevance a certain performance area has to their partner in order to view their partner as better off than is actually the case. The distortion moves in the direction of minimizing negative partner comparison and maximizing potential partner positive

reflection. Partners may adjust what is highly relevant to their core identity and develop their self in new ways in order to avoid negative comparison and gain positive reflection when comparing themselves to their partner. This type of adjustment is important for creating long-term positive self-evaluation benefits, especially if specialized expertise is developed in areas that attract favorable external responses (Beach et al., 1996).

One component of being a successful couple is the ability to make decisions together. Couples use the framework from the SEM model to divide decision-making power and help both people maintain positive self-evaluations. Agreement on the decision marks who is the expert in the decision area. When SEM model benefits can be expected from the result of one person's decision, the percentage of decisions made by that spouse resulting in agreement is high (Beach & Tesser, 1993). The opposite is also true: when a SEM threat can be expected from a person's decision the percentage of decisions resulting in agreement is low. Decision agreement is correlated with relationship satisfaction; the higher the decision agreement percentage, the more satisfied the couple is. In addition, when a spouse made a decision that raised his or her self-evaluation, but damaged or did not affect the spouse, his or her benefit from the positive reflection or comparison was mitigated to a degree. Therefore, one is more likely to make or agree with decisions that benefit both partners' self-evaluation. The repeated occurrence of events that challenge rather than support positive self-evaluation causes couples to sacrifice some relationship closeness in order to reduce the threat to their self-evaluation. This pattern is more likely to be seen in dissatisfied couples rather than satisfied couples. The goal is to maximize joint outcomes that benefit both people in order to keep relationship and personal satisfaction high. Couples that provided more

self-evaluation maintenance opportunities for both spouses were more satisfied than those that limited their opportunities (Beach & Tesser 1993).

Mendolia et al. (1996) studied videotapes of couples discussing a divisive relationship issue that needed to be solved. They used the assumption that people are motivated to maintain their own and their partner's positive self-evaluation in order to keep the relationship healthy. The purpose of the study was to look at individual differences in protecting a partner's positive self-evaluation and how these differences affected their interaction behavior. They found that the people who were more responsive to their partner's needs were more likely to have positive interaction behavior, while those who focused on their own needs tended to have unfavorable interaction behavior. Therefore, partners in relationships need to be more selfless than they would be in a relationship with an acquaintance in order to have successful interactions where they can problem solve and make decisions that will benefit both people's SEM needs. In this way, both people can maximize the positive gain to be made from interactions rather than compete for the most gain.

The division of power within a relationship also has a significant impact on how the SEM model is used for romantic couples to make decisions. Power can either influence people to act in socially responsible ways (power primed communals) or more in line with their own interests (power primed exchangers). If a person links power with socially responsible goals then they will focus on being attentive to others' needs and will give without expecting anything in return. Those who link power with their own interests will help others, but keep a tally on favors because they expect to receive comparable benefits in return for help. People who have power and focus on keeping a tally in

relationships tend to think that they owe less to the people below them because they have fewer benefits to offer (Chen & Bargh, 2001). Therefore, when an exchanger is in a romantic relationship, he or she would be less likely to cede performance areas that are high-relevance to their partner because he or she would not gain as much from the reflection process. Exchangers will also act to raise their own self-evaluation, without much regard for the effect on their partner's positive self-evaluation. On the other hand, power primed communals would act in ways that would benefit both partners' self-evaluation and would be more likely to cede performance areas that are high-relevance to their partner in order for their partner to gain from positive comparison.

Gender, or the meaning that is attached to typical gender roles, also determines power in a relationship. Traditionally, males have had more access to concrete resources and external power sources. They also use direct and bilateral influence strategies as opposed to women who use indirect and unilateral strategies because women do not typically expect compliance from men (Sagrestano, 1992). In terms of the SEM model, this translates into men having a tendency to use comparison to raise their self-evaluation and for women to use reflection of their partner's achievements to maintain a positive self-evaluation. This occurs because men have more opportunities for positive comparison due to their access to prime resources (Beach et al., 1996). Equal partner couples showed more satisfaction with the relationship and used fewer power strategies than traditional couples. In addition, greater marital dissatisfaction is associated with indirect power strategy use, which is the type most commonly used by women (Sagrestano, 1992). It's possible that men are dissatisfied when the power of their partner eclipses their own in the relationship because they receive less positive self-evaluation

from the reflection process than the comparison process. Therefore, the more couples view each other as equals, the more likely the SEM model will be used as a give and take process and increase relationship satisfaction.

Conflict tends to occur in couples in which both partners are striving for unique identities in the same performance area because they are competing and comparing their performance to the other. Similarity breeds attraction and people appear to seek partners who's resources and talents complement their own (Burleson, 1994). These tendencies make it more likely for couples to have several of the same high-relevance areas. When both partners' self-definitions are similar (many high-relevance areas in common), the reflection process is reduced and couples compete more (Pilkington et al., 1991). In addition, the winner or high-performer in the relationship tends to feel guilty for outperforming his or her partner in a shared high-relevance area. In order to reduce the conflict, the situation has to be manipulated so that one partner can bask in the reflected glory of the other and vice versa for different performance areas. Couples achieve this by specializing within the high-relevance performance area. To specialize, one person is recognized as the expert in 50% of the sub-categories of a particular domain and the partner is recognized as the expert in the remaining 50%. An area is ceded when one is outperformed. However, overall relevance and expertise in the performance area remains high for both individuals (Morewitz 2001). For example, if both people in a relationship saw sports as a high-relevance performance area, they would specialize so that one person was considered an expert in American sports and the other an expert in European sports.

This conflict within performance areas for romantic couples is a relatively new development in relationships. Women have become increasingly involved in traditionally male dominated performance areas through their education, careers, and recreational activities. Likewise, men have ventured into traditionally female dominated roles. In essence, there are a lot more crossovers than there used to be even just fifty years ago. A study of traditional and modern married couples revealed the new types of conflict in modern couples. Haber and Austin (1992) theorize that traditional couples do not have many conflicts over decisions about roles and expectations because their actions are determined by the traditional gender roles of males and females. For example, females are traditionally expected to do the housework while men are expected to take care of the bills. Modern couples have more trouble discerning their marital roles because of the greater flexibility. This flexibility also creates the problem of overlap in performance areas people consider critical to their core identity. Additionally, couples that consist of one modern and one traditionally-minded person are less likely to cooperate and more likely to compete with each other, especially in situations where the modern-minded person attempts to be flexible in traditional roles. They are also more likely to use avoidance and less likely to reach a solution or be satisfied with the outcome. This theory is supported by the idea that sex role disparity is the best predictor of a person's ability to resist or adapt to a change in position in a variety of issues (Haber & Austin, 1992). The flexibility in gender roles that is characterizing the 21st century is a double edged sword because of the walls that are being town down and the conflicting performance areas created.

All of the research on the specialization aspect of the SEM Model to date has been conducted through surveys. In an experiment by Beach et al. (1998), the SEM model was used to predict people's self-reported affective responses to performing better or worse than their romantic partner. Both comparison and reflective behavior were studied through the manipulation of the performance domain. Strangers and romantic partners showed a different pattern of empathetic and comparison responses because romantic partners took into account the SEM needs of their partner. However, in HH relevance areas (high-relevance for both people), neither romantic nor stranger pairs showed empathetic behavior by ceding the performance domain to their partner.

In an experiment by Morewitz (2001), a survey was developed that tested the relevance of a variety of performance areas and sub-domains to the participants' self-identity and their partners' self-identity. For example, one of the performance areas was sports, which was divided into sub-domains such as basketball, baseball, tennis, etc. The participants rated each performance area on a scale from 1 to 6 (6 being the most relevant). If a performance area was rated 1 through 3 it was considered a low-relevance performance area to the person, while if it was rated between 3 and 6 it was considered high-relevance to the participant. The survey also asked for the level of expertise of both people in each performance area and sub-domain. From the survey results, it could be determined which performance areas and sub-domains were ceded to which person in the relationship. In this way, it was simple to see specialization in romantic couples in the high-high relevance performance areas because the expertise in about 50% of the sub-domains was assigned to one person in the couple, while the remaining sub-domains were ceded to the other person. A related experiment done by McGinley (2004), which

collected surveys from both people in the romantic relationship, also produced similar results in regard to sub-domain division.

Since all previous research has relied on self-report, the purpose of the current study was to create a situation where couples will use specialization in a controlled setting. Romantic couples were still used as the primary unit because closeness is a basic standard needed for SEM processes to occur. Therefore, stable and committed romantic couples are relationships that should display strong SEM effects and processes. Participants played a version of Trivial Pursuit either as a romantic couple team against another romantic couple or a stranger pair against another stranger pair. Couples should display complementarity by deciding to cede performance areas that are low-relevance to one person and high-relevance to the other to the high-relevance person. This behavior would replicate the Pilkington et al. (1991) study that extended the SEM model to romantic relationships as well as provide behavioral support for the findings of Morewitz (2001) and McGinley (2003). Participants should display specialization in high-high relevance performance areas by allowing one person to answer all questions within a sub-domain and ceding questions in another sub-domain to the partner. Due to the fact that stranger pairs have no advance knowledge of each other, they should not display complementarity or specialization. Participants are not aware that the SEM model is the focus of study until the experiment is completed, so the study should also display how complementarity and specialization are primarily unconscious and automatic processes. These processes are vital to a couple's success because they allow couples to avoid conflict over performance in certain areas that are relevant to both partners' self-identity.

Method

Participants

Participants came from the student body at The College of William and Mary and received introductory psychology class credit for their participation. There were 28 couples and 28 stranger pairs who participated in the experiment, two pairs at a time. The average age for participants was about 19 years old (females $M = 19.16$, $SD = 1.10$, males $M = 19.41$, $SD = 1.36$). The participants involved in romantic relationships reported being romantically involved between 2 and 25 months ($M = 10.68$, $SD = 7.22$).

Materials

The game the participants played was based on the Trivial Pursuit Team edition board game (Trivial Pursuit, 2009). Most of trivia questions and hints were chosen from cards in this Trivial Pursuit set; the researcher developed the rest. There were six questions per topic area and 12 topic areas or categories in total (see Appendix A for a complete list of questions). In addition, there were two sub-domains for each category and there were three questions from each category in each sub-domain. The sub-domains were used as hints while playing the game. The board and pieces were used to track the scores of both teams.

A Relevance test (see Appendix B) was designed to determine which topic areas were of high or low relevance to the participants. They rated each topic on a 6-point scale, where 1 = not relevant and 6 = most relevant. The topics included on the relevance test that were related to the Trivial Pursuit questions were history, literature, famous modern people, art, cartoons, geography, nature, movies, music, sports, science, and TV.

Rubin's (1970) Love and Liking Scale was used with the romantic couples to determine their attitudes towards other (see Appendix C). A post-experimental questionnaire was used to determine the couples' and stranger pairs' attitudes towards each other (see Appendix D) and collect demographic information (see Appendix E).

Procedure

All participants filled out an informed consent form (see Appendix F) and the Relevance Test, which determined the high and low relevance topic areas for each participant. A cover story, which led participants to believe the study would test game theory, was used in all conditions (see Appendix G).

Participants took part in one of two conditions. They were either part of a romantic couple playing against another romantic couple or a set of strangers playing against another set of strangers. In the couple situation, they were told they are chosen because they know each other well. In the stranger condition, they were told that they were in the control condition.

Participants in both conditions played the game the same way. The questions were randomized in order to ensure that the pairs did not receive too many questions from one topic area. After a coin toss to determine which pair would go first, the moderator read the topic area and a hint (which was the sub-domain) for the question. After hearing both pieces of information, the pair decided to either (a) answer the question together for 3 points or (b) choose one person to answer the question for 5 points. They were given one chance to answer the question and received zero points if the answer was incorrect. If the answer was correct, they would move their marker along the Trivial Pursuit board the appropriate number of spaces. Then, the next question would go to the other pair, who

were told the topic area and hint and then given the same options for how to answer the question. The pattern continued until all 72 trivia questions had been answered.

In all conditions, after all of the questions were answered, participants completed a demographic survey and a questionnaire that measured closeness. The romantic couples also completed Rubin's (1970) Love and Liking Scale. Then the participants were debriefed and told why the deception was necessary. They were also told the true purpose of the study (see Appendix H for verbatim script).

Results

Given that the Trivial Pursuit game was played with two teams (either strangers or romantic partners) and the pairs worked collaboratively to play the game, all of the following analysis used the couple as the unit of analysis. The between-couple analyses compared specialization and complementarity patterns of couples with different relevance patterns. The within-couple analysis compared gender effects and love and liking scores towards the partner (see Table 1 for descriptive statistics). Bonferroni corrections were not applied to the data.

Specialization

The main hypothesis centered on whether or not couples would show greater specialization in HH relevance (high-relevance for both people in the pair) conditions compared to stranger pairs. The data did not support this hypothesis. The data was divided so that only HH questions were analyzed. The questions that the pair answered together were removed, so that all that remained were the questions that were answered individually. In addition, when a couple only had one question in a category it was removed because the one question cannot be used to show specialization. Thirty couples'

data remained at this point. There were 12 stranger pairs and 18 romantic pairs analyzed.

To determine if the couples specialized, the questions in each category that each couple

answered were compared to see if each sub-domain was allocated to one person within

the pair. The questions were randomized for each trial, so it was impossible to determine

how many HH relevance questions were given to each couple. Therefore, for each

couple, instances showing specialization were divided by the total possible opportunities

for specialization to calculate a percentage of time each couple specialized. A 2

(relationship type) x (specialization) one-way ANOVA was computed, which did not

yield a significant result, $F(1, 54) = 1.39$, $p = .24$ (romantic $M = .27.98\%$, $SD = 41.59$,

stranger $M = 16.07\%$, $SD = 33.48$). Therefore, the romantic couples did not specialize

more frequently than stranger pairs (see Table 2).

Looking only at the HH relevance condition (where specialization is predicted to

occur), a significant trend emerged. When stranger pairs were answering HH relevance

questions women answered 7% of the questions, males answered 8% and they answered

84% of the questions together. In contrast, when romantic couples did the experiment,

women answered 7% of the HH relevance questions, males answered 28% and they

answered 65% of the questions together. To see if the difference in male answering

patterns between relationship types was significant, the percentage of HH relevance

questions each person in the pair answered was calculated. A 2 (relationship type) x HH

relevance male answered MANOVA was calculated, which yielded a significant result,

$F(1, 54) = 12.14$, $p < .0001$ (romantic $M = 28.11\%$, $SD = 27.64$, stranger $M = 8.39\%$, SD

$= 11.51$). As expected, a 2 (relationship type) x HH relevance female answered repeated-

measures ANOVA did not yield a significant result, $F(1, 54) = .00$, $p = .99$ (romantic $M =$

7.65%, $SD = 12.07$, stranger $M = 7.71\%$, $SD = 14.12$). Therefore, romantic couples were more likely to divide during the HH relevance questions (see Table 3). Specifically, in romantic couples, males answered more questions individually, while the number of questions women answered remained constant (see Figure 1).

Complementarity

Complementarity was determined by comparing the relevance of a question (LH or HL) to who answered it (male, female, or together). Pairs complemented when the person who reported the category as high-relevance also answered the question. The questions were randomized for each trial, so it was impossible to determine how many HL and LH relevance questions were given to each couple. Therefore, for each couple, instances showing complementarity were divided by the total possible opportunities for complementarity to calculate a percentage of time each couple complemented.

A variable was created to test whether or not proper complementarity had an effect on answering the question correctly across relationship types. This variable, called divide and conquer, refers to instances when the couple showed complementarity and also answered the question correctly. The percentage of the time each couple divided and conquered was also calculated.

A frequency of complementarity and frequency of divide and conquer x 2 (relationship type) MANOVA was calculated, which yielded insignificant results. Romantic couples did not complement more often than stranger pairs, $F(1, 54) = 1.45$, $p = .33$ (romantic $M = 26.89\%$, $SD = 19.80$, stranger $M = 20.36\%$, $SD = 20.70$). In addition, romantic couples did not divide and conquer more often than stranger pairs, $F(1, 54) = 2.01$, $p = .16$ (romantic $M = 11.40\%$, $SD = 15.26$, stranger $M = 6.55\%$, $SD = 9.76$).

Therefore, romantic couples did not cede the trivia questions to the person who reported the category as high-relevance more often than the stranger pairs nor were they more likely to get the question right when they did show complementarity (see Table 4).

Relevance

To determine if the relevance of a trivia question to one person (either in a stranger or romantic pair) had an effect on whether or not they answered the question a 2 (relationship type) mixed factorial repeated-measures ANOVA was used, which did yield a significant effect, $F(1, 54) = 10.47$, $p = .002$. The romantic couples answered more questions individually than stranger pairs, but the only significant difference was in the HH relevance condition, $F(1, 54) = 7.36$, $p = .009$ (see Table 5 for means and standard deviations). Within-couple contrast tests showed that there were significant differences in the percentage of questions females and males answered in the HL, LH and HH relevance categories (see Table 6 for ANOVA results). In the LL (low-relevance to both people), pairs were more likely to answer the question together, while in the LH (low-relevance for males and high-relevance for females) and HL (high-relevance for males and low-relevance for females) conditions, the person who reported the performance area as high relevance was more likely to answer it. In the HH relevance category, males in a romantic relationship were more likely to answer the question (see Figure 2). Overall, females answered the question 9% of the time, males answered 15% of the time and they answered the question together 76% of the time.

Gender Effects

To determine who was more likely to compliment (by allowing the other person to answer their high-relevance questions) across relationship types, frequency of

complementarity percentages were calculated for males and females. Couples complemented by ceding, which was determined by who answered the question, so if the male answered it then the female complemented by ceding the question to him.

A 2 (relationship type) x female complemented MANOVA was calculated, which did not yield a significant result, $F(1, 54) = .74$, $p < .39$ (romantic $M = 49.40\%$, $SD = 43.27$, stranger $M = 39.48\%$, $SD = 42.75$). Therefore, females did not complement more in romantic relationships when compared to stranger pairs. The 2 (relationship type) x male complemented MANOVA also did not yield a significant result, $F(1, 54) = .01$, $p = .94$ (romantic $M = 32.75\%$, $SD = 39.55$, stranger $M = 31.95\%$, $SD = 40.05$). Males also did not complement more in romantic pairs when compared to their behavior in stranger pairs (see Table 7).

A paired sample t-test was used to compare the complementing behavior of males and females and determine if one gender ceded more questions than the other. The test did not yield a significant result, $t(55) = 1.28$, $p = .21$ (males $M = 32.35\%$, $SD = 39.44$, females $M = 44.44\%$, $SD = 42.91$). Therefore, males and females did not show any difference in their complementing behavior and were equally likely to cede questions to their partner. This did not occur because there were disproportionate amounts of female high-relevance and male high-relevance questions because they had almost the same number of questions each. Overall, the data did not show any gender or relationship differences in frequency of ceding behavior for complementing.

Love and Liking Effects

Romantic couples reported being romantically involved for an average of 10.68 months ($SD = 7.22$) however, length of relationship ranged from 2 to 25 months. It was

not possible to run analysis on satisfaction of the romantic relationship because the

satisfaction levels were high for all of the couples. It was computed on a 7-point scale

with 1 = very dissatisfied and 7 = very satisfied, (M = 6.59, SD = .56). There were no

dissatisfied couples that completed the experiment. It was also not possible to run

analysis on exclusivity because all of the couples reported being exclusive.

In order to compare liking levels within pairs, a post-experimental questionnaire

was used which listed a series of statements about the similarity of the two people on a 7-

point scale with 7 = like, agree and 1 = dislike, disagree. A principle components analysis

was computed for females using the scores from the six questions that intended to

measure liking of the partner after the experiment. This yielded one factor with an

eigenvalue of 3.72. All of the questions had a loading greater than .30 (see Table 8 for

individual factor loadings). The responses were then added together to create a total

liking score that could fall between 7 and 42. The resulting reliability was α = .87. Higher

scores represented more positive liking feelings towards their partner in the experiment

(M = 29.11, SD = 7.47). A principle components analysis was then computed for males

using the scores from the six questions that intended to measure liking of the partner after

the experiment. This yielded one factor with an eigenvalue of 3.51. All of the questions

had a loading greater than .30 (see Table 9 for individual factor loadings). The responses

were then added together to create a total liking score that could fall between 7 and 42.

The resulting reliability was α = .84. Higher scores represented more positive liking

feelings towards their partner in the experiment (M = 29.11, SD = 7.54).

For stranger pairs, female and male liking scores taken after completing the

experiment were not correlated, $r(27) = .03, p = .86$. However, the opposite was true for

romantic couples, male and female liking scores were correlated, $r(27) = .51, p = .01$.

This result is not surprising considering the high overall relationship satisfaction levels

for romantic couples and it follows that if couples are satisfied they also like each other.

Pearson correlations were also computed to compare the frequency of

complementarity to female and male post-experiment liking scores across relationship

types. In romantic couples, there was a significant negative correlation between

frequency of complementarity and male post-experiment liking scores, $r(27) = -.52, p =$

.01. Therefore, as the males' liking scores increased, they complemented with their

partners less often. However, there was no significant correlation found between female

post-experiment liking scores and frequency of complementarity, $r(27) = -.01, p = .96$. In

stranger pairs, there were no significant correlations found between frequency of

complementarity and post-experiment liking scores.

Rubin's Love and Liking Scale was also used to determine patterns within

romantic couples. The test consisted of 26 questions that were rated on a scale from 1 to

9, 1 = not at all true, disagree and 9 = very true, strongly agree. The scores of the first 13

questions were added together to create a liking score and the last 13 questions were

added to create a love score. The scores could range from 13 to 117 (see Table 1 for

means and standard deviations). A Pearson correlation was used to compare female liking

and love for their partners, which showed a positive correlation, $r(27) = .48, p = .01$. This

means that as female's liking for their partner increased, so did their love for their

partner, however males did not show the same correlation, $r(27) = .32, p = .09$.

Correlations were then conducted to measure the effects of male and female love and liking scores on frequency of complementarity, however, no significant correlations were found.

In romantic couples, the relationship between female and male post-experiment liking scores and love and liking scores were also calculated using Pearson correlations. Significant positive correlations were found between female post-experiment liking scores and female love and liking scores, love: $r(27) = .40$, $p = .03$, liking: $r(27) = .46$, $p = .03$. Therefore, high female post-experiment liking scores were related with high love and liking scores. For males, a significant correlation was only found between post-experiment liking scores and love scores, $r(27) = .67$, $p < .001$. Positive correlations between the post-experiment liking scores and the romantic couples' love and liking scores is not surprising because couples' feelings towards their partner should have remained consistent throughout both surveys, which is why as one score increased it made sense for the score on the other survey to increase as well.

Discussion

Overall, the data did not provide support for specialization within the romantic couples during the HH relevance situations compared to stranger pairs or complementarity in romantic pairs during the LH and HL relevance conditions. However, the data did support gender effects within the SEM Model.

Specialization and Complementarity

It was predicted that in the HH relevance conditions, couples would divide and let one person answer all of the questions in one sub-domain and cede the rest to the other person. Experiments by Morewitz (2001) and McGinley (2004) have shown this

phenomenon. These two experiments used self-report to determine the relevance and behavior of couples. The purpose of this experiment was to use behavioral means to display specialization in romantic couples by playing a version of Trivial Pursuit. The data did not support these previous findings because there were no statistical differences in sub-domain division across relationship types. Therefore, the stranger and romantic pairs did not divide up the sub-domains in a significantly different way. The data shows that the sub-domains were randomly assigned to individuals rather than choosing one person strategically. Neither type of relationship used specialization to answer the HH relevance questions; however, couples were more likely to divide. Females answered the same percentage of HH relevance questions across relationship types, but males answered 21% more questions when they were part of a romantic pair. Across both relationship types, the vast majority of the questions were answered together in the HH relevance condition.

The increased ceding of questions to males in romantic relationships for the HH relevance conditions probably occurred for a number of reasons. First, males benefit more from comparison, so if they believe they can answer a question correctly and see that they can gain more from comparison to a close other, they will answer the question alone. Second, the current study shows females in relationships were more likely to cede performance areas to their partner, especially when the partner appeared confident in the performance domain. Lastly, males were probably more willing to risk answering the question wrong because they were also more willing to answer questions on their own. Males took advantage of the comparison benefits that were possible through answering alone, while females were not as willing to put themselves out on a limb alone.

The second purpose of the current study was to provide further support for complementarity in romantic relationships. This phenomenon occurs in LH and HL relevance conditions. When one person in the relationship is outperformed at a performance domain and the other person considers that domain high-relevance, they will cede the domain to the one who reported it as high-relevance (Beach et al., 2001, Pilkington, Tesser, & Stephens, (1991), and Beach et al., (1996)). The data did not support the concept of complementarity in romantic relationships. This means that romantic couples did not cede performance areas to the person who reported it has high-relevance more often than the stranger pairs.

There are several possibilities for why behavioral specialization and complementarity were not demonstrated during the adapted Trivial Pursuit game, while they were observed in self-report questionnaires in previous experiments. The chances for Type II error were significant in the current study because the small and limited sample size. Most likely, there was not enough statistical power in order to calculate statistically different results. It's likely that the predicted differences in behavior between romantic couples and stranger pairs actually do exist, but that the current study could not measure them accurately.

The pull of the SEM Model did not have enough strength because it was not set up to maximize comparison or reflection benefits for an individual. The game was designed to be one couple vs. one couple and therefore the unit was stressed more than the individual. This mentality could have been transferred to the participants who also began to think of themselves as first, part of a couple and second, as an individual. Therefore, instead of considering their own personal SEM needs as well as their partners'

needs, they considered the needs of the couple. The couple then would have thought that they just needed to find a way to win the game in order to both feel good about themselves. Instead of comparing within couples, they compared between couples. As long as the couple was victorious, then both people in the relationship could raise their self-evaluation. The individual needs came second to the need of the group to succeed at the game. This type of thinking probably contributed to the high number of questions answered together as well as the "play it safe" strategies used to obtain a lead and maintain it while playing the game.

One study done by Beach et al (2001) looked at complementarity in romantic relationships by giving performance feedback to analyze the changes to self and partner relevance for any given performance area. They found that complementarity only occurs when comparing to a close other and that it is a relatively automatic process. Findings across the two studies showed that in response to differential performance feedback, partners in romantic relationships protect their views of the relationship as a "team" by increasing "perceived complementarity." This phenomenon appears to be relatively automatic. The current study could also have increased the need for people in romantic relationships to view themselves as a team and therefore divide less often than they would otherwise, especially not along the definitions determined by relevance.

A study done by Tesser et al (1998) studied defensiveness when comparing oneself to others with whom you have a close relationship. Participants either wrote essays about being similar to their partner or essays about being a unique departure from their partner. The essays where participants were told to focus on similarities with their partner were associated with good feelings, a "we" focus, and limited cognitive

processing. Essays where participants focused on their uniqueness were associated with negative feelings, a self-focus, and considerable cognitive processing in order to understand and assimilate. The game used in this experiment could have highlighted the similarities between the two people in the romantic relationship, which would then increase the "we" focus demonstrated in the results.

Another possibility for why the romantic couples did not display specialization is the Trivial Pursuit game itself could have been too engaging. The participants were all college students at a competitive university; therefore they had a strong desire to prove their knowledge and answer questions correctly. If they participants were involved in a close game where they could not hang onto a lead, the game might have been too distracting. Their desire to win might have overshadowed how their partners' would feel if they disregarded their interests. In an unpublished study done by Pilkington, the circumstances necessary for a person to take a dive for their romantic partner were studied through the use of a computer game. The study was ultimately unsuccessful because the game was thought to be too engaging and the participants would put their romantic partner out of their mind while playing (C. J. Pilkington , personal communication, April 12, 2010). Although romantic couples were more likely to divide than stranger pairs, this could occur because the males' natural competitive sides are more engaged than their consideration for their partners' self-evaluation.

Along the same lines as the reasoning that the game was too engaging to provide an optimal environment for specialization, the game had a high cognitive load. The questions were challenging because the game was not designed for participants to be able to answer all of the trivia questions correctly. Therefore, the combination of analyzing the

trivia questions, trying to recall the correct answer, and invoking gaming strategies might have made considering a partner's SEM needs impossible. That aspect of the game was not as important as advancing on the board by answering the trivia questions correctly. The high cognitive load could have made SEM processes impossible to undertake because the participants were addressing so many other more pressing aspects of the experiment.

The couples also used strategy during the game, which contributed to their decision about whether or not to divide or answer the trivia questions together. When one couple was far behind another couple or when one couple was far ahead of another couple on the Trivial Pursuit board, they tended to answer together. When the couple was behind the mentality was "Two heads are better than one. Let's just try and catch up before we go for more points by dividing." When the couple was ahead their mentality was "there is no reason to divide because we are already so far ahead, so why would we risk falling behind by dividing and getting the question wrong." When the couples were tied, they also tended to answer together in order to avoid the risk of widening the gap between the two teams. The most likely situation where couples would divide was when they had a small lead or were following the other team at a small distance. These strategies help explain why both the stranger and romantic pairs tended to answer the questions together in order to maintain the self-evaluation of the couple as a unit.

Another possible factor for why couples did not display specialization in the HH relevance condition is that relevance was not as prominently stressed as it had been in past experiments. There was no overarching theme that made winning the game a more defining achievement, such as in Tesser & Smith's study (1980) where they told

participants that winning the game meant they demonstrated a higher understanding of the English language. The relevance test could have also been too vague because it tested the relevance of topics such as "history", which are extremely broad and hard to define. The relevance of the sub-domains were never tested during the experiment, it was simply assumed that the couples would divide along the sub-domain lines regardless of how relevant it was to their personal identity. It's possible that both sub-domains were high for one person and lower for the other. It's also equally possible that neither person considered the sub-domain to be high relevance and therefore, they answered the question together. Having such loose names for categories and sub-domains might have made the SEM processes, especially specialization more difficult because both people had trouble specifically defining the relevance of such a broad group to their self-identity. A study by Beach et al., (2002) found that their variable called "perceived fit with partner" could be easily manipulated by feedback and is therefore not closely related to relationship history or agreement among the partners. The variable "perceived fit with partner" is closely related to relevance and how the relevance of performance domains of one person fits together with the relevance of performance domains of the partner. The instability of relevance makes it a difficult variable to quantify or measure to begin with and could have contributed to the particpants' uncertainty when completing the relevance questionnaire and the experiment.

Performance Ecology can also be used to explain the lack of sub-domain specialization. A person's niche is determined by the relevance of performance areas to his or her self-identity. It is important that a person's niche fit with the partner's; otherwise they are considered to have an imbalance in their performance ecology. A

study by O'Mahen, Beach, and Tesser (2000) found a linear relationship between the level of ecology imbalance and negative behavior. Negative behavior simply means that the couple did not complement, specialize, or show empathetic behavior. The higher level of imbalance led to more comparison interactions rather than reflection. Therefore, if any of the couples in this experiment had an imbalance, their performance would be shaped by negative behavior and reduce the amount of complementarity and specialization observed.

Relevance

A test of the relationship between relevance and who answered the question yielded a significant result, meaning that the relevance of the question did have an effect on who was most likely to answer it. This did not differ significantly across relationship types, although the romantic couples' answering pattern most likely drove the effect. In the LL conditions, the pairs were most likely to answer the questions together, in the LH or HL relevance conditions the person who reported the performance domain as high-relevance was most likely to answer the question, and in the HH relevance condition they were most likely to answer together. Romantic pairs divided more often than the stranger pairs, although both relationship types answered the vast majority of the questions together. These tests of relevance serve to show that participants did take into account their own and their partner's expertise in order to decide whether or not to answer the question individually. This result highlights the importance of performance domain relevance to behavior and the types of situations in which participants felt confident enough to break away from their game partner and tackle the problem on their own.

Gender Effects

In situations where couples showed complementarity, the expected gender effect did not emerge where females were more likely to cede performance areas to males rather than the other way around or ceding performance areas equally. Even though there were an almost equal number of LH and HL relevance questions, females answered individually 32.35% of the time, while males answered 44.44% alone. However, this difference was not significant, probably due to inadequate statistical power. Therefore, the data shows that neither females nor males answered significantly more questions individually during the game. This result is not consistent with the study done by Beach, Tesser, Mendolia, et al (1996). Females report being outperformed more often in areas that are high relevance than males do. This occurs because women are able to gain more from the reflection process than males are and therefore allow males to succeed in their high performance domains in order to gain from reflection processes. Men are less likely to cede performance areas because they need to use the competing process more to raise or maintain their self-evaluation (Beach, Tesser, Mendolia, et al 1996). Males could also be affected by the power dynamic in the relationship and not want to cede power to the other person because they cannot see any benefit for themselves from it (Chen & Bargh 2001). Males and females might have been distracted by the game, so they were not attentive to their partners' SEM needs.

Love and Liking Effects

The only significant result comparing post-experiment liking scores occurred in females in stranger pairs. As liking for their partner increased, so did the frequency of complementarity. Romantic pairs' post-experiment liking scores had no influence on complementing behavior. Females' liking scores from Rubin's Love and Liking Scale

were also correlated with complementing behavior, but female love scores were not correlated with frequency of complementarity. Males' scores showed the opposite pattern, love scores were correlated with decreasing complementing behavior, but like scores did not yield a positive correlation. The data partially supported the study done by Pilkington, Tesser, & Stephens (1991) that found participants that liked their partner less showed stronger comparison and weaker reflecting tendencies.

The variety of correlations across love and liking scores indicates that love and liking are probably not the best predictor of complementing behavior. The tests are measuring broad feelings of like and love and then using them to predict very specific behaviors. Normally, surveys that look at broad categories are only able to predict general behavior, rather than specific behavior. In order to predict specific behavior, a more detailed and focused test is required. Once love and liking is measured more precisely, it will be more plausible to apply those scores to complementing behavior in stranger and romantic pairs.

Future Directions

Although the current study did provide support for previous studies on complementarity, it did not support the findings of Morewitz (2001) and McGinley (2003). These studies used questionnaires and self-report from those in romantic relationships to track specialization in HH relevance conditions. The significant results found in those two studies indicate that specialization does occur, even if it has not been produced in a laboratory setting. Therefore, it is still necessary to create a task where couples will demonstrate specialization. The Trivial Pursuit game used in the current study is too engaging and induces a high cognitive load on the participants. It also

enforces the idea of the couples as a unit, rather than two individuals. Therefore, the self-evaluation of the couple was being protected more than individual SEM needs.

The engaging nature of the game also induced strong gaming strategy and competition between the pairs. It is difficult to remove those factors from a game without making it so simple that participants lose interest quickly. On the other hand, reducing competitiveness would create more of a pure environment where specialization would be more likely to occur as participants have more time to devote to partner SEM needs. In order to reduce the gaming strategy the couples engaged in, the Trivial Pursuit board that kept the score should be hidden from the participant's view. Therefore, they would not be able to easily quantify how far ahead or behind the other team they were. This would reduce the amount of competition between the two couples during the game as well as reduce the need for game strategy.

The questionnaires for relevance also need to test for more specific attitudes. As a general rule, broadly worded questionnaires are more effective at predicting general behaviors. Highly specific questionnaires must be used in order to predict a distinct behavior. The current study consisted of broadly worded relevance questionnaires attempting to predict a specific behavior, namely specialization. For example, some of the relevance categories were famous modern people and geography and the sub-domains were not much more specific. For famous modern people they were either actors or singers and for geography the sub-domains were natural and man-made. The relevance questionnaires used in Morewitz (2001) and McGinley (2003) that tested specialization should be used to create sub-domains and then trivia questions that fit under that specific sub-domain. The other method to alleviate the current broad questionnaire/specific

behavior problem is to keep the relevance questionnaire the way it is, but increase the time for observing specialization. In that way, many instances of specialization can be observed over a period of time, which could be synthesized into a general behavioral trend. A diary study model could be considered as a method for tracking specialization over time.

The specialization mechanism seen in romantic couples requires much more study before it is understood fully. Considering the scant amount of research on the mechanism, there are many possible avenues for future study. All past research on specialization has centered on romantic relationships because they are known to display strong SEM processes. However, the relationship between same-sex best friends can be equally as close as a romantic partner. Therefore, it would be interesting to see if specialization occurs in shared HH relevance situations for best friends as well. A significant result would mean that people use specialization to reduce competition with all close others, rather than just a romantic partner. Studying specialization in best friends broadens the scope of the specialization mechanism.

Specialization and complementarity has been primarily studied in Caucasian college students. Expanding the participant pool across cultures would test if the mechanisms are innate in people throughout the world or if they are shaped by American society's influences on romantic couples. In other cultures, gender roles might be more or less strictly upheld, competition could be viewed differently, and couples might be more or less attentive to their partners' SEM needs. All of these factors would have a significant effect on the prominence of complementarity and specialization around the world.

The current study found a positive correlation between length of relationship and complementarity, however it was a limited sample where the longest relationship was only 25 months. Increasing the sample to include married couples as well as a range of ages would show changes in complementary over time with more detail. In addition, increasing the age range would help determine a "critical time", where couples start complementing accurately because they now understand the other person's SEM needs through his or her interests and talents.

In the current study it was not possible to test the relationship between relationship satisfaction and exclusivity because of the overall high satisfaction with the relationship. In addition, love and liking scores computed from Rubin's Love and Liking Scale were all on the higher end of the scale. Comparing specialization and complementing behavior with couples that have a wider range of satisfaction, love scores, and liking scores would show how those emotions moderate the mechanisms described in the SEM Model. It is likely that the couples' behavior would be influenced by their feelings for their partner.

Although the current study did not support show support for specialization in romantic couples, it did provide further evidence for complementing behavior as well as behavioral gender differences. The Trivial Pursuit game was too engaging and distracted participants from being attentive to their partner's SEM needs and instead attending to the couple's evaluation. By redesigning the relevance questionnaires to be more specific and changing a few aspects of the game, the chances that the romantic couples will display specialization are favorable. Overall, the current partial understanding of specialization and complementation mechanisms leaves many openings for future

research. Understanding how the processes work, not only describes how couples cope

with competition, but also how their interests fit together and how they support each

other in order to maintain positive self-evaluations. The strong implications and links of

specialization and complementing behavior to relationship health highlight the

importance of further research on the processes and application to real-world situations.

References

Beach, S. R. H., & Tesser, A. (1993). Decision making power and marital satisfaction: A self-evaluation maintence perspective. *Journal of Social and Clinical Psychology, 12*(4), 471-494.

Beach, S. R. H., & Tesser, A. (1995). Self-esteem and the extended self-evaluation maintenance model: The self in social context. *Efficacy, agency, and self-esteem* (pp. 145-170). New York, NY US: Plenum Press. Retrieved from PsycINFO database.

Beach, S. R. H., Tesser, A., Fincham, F. D., Jones, D. J., Johnson, D., & Whitaker, D. J. (1998). Pleasure and pain in doing well, together: An investigation of performance-related affect in close relationships. *Journal of Personality and Social Psychology, 74*(4), 923-938.

Beach, S. R. H., Tesser, A., Mendolia, M., Anderson, P., Crelia, R., Whitaker, D., & Fincham, F.D. (1996). Self-evaluation maintenance in marriage: Toward a performance ecology of the marital relationship. *Journal of Family Psychology, 10*(4), 379-396.

Beach, S. R. H., Whitaker, D. J., Jones, D. J., & Tesser, A. (2001). When does performance feedback prompt complementarity in romantic relationships? *Personal Relationships, 8*(3)*,* 231-248.

Beach, S. R. H., Whitaker, D. J., O'Mahen, H. A., Jones, D. J., Tesser, A., & Fincham, F. D. (2002). *Competition in romantic relationships: Do partners build niches?*. New York: Cambridge University Press.

Brazil, Donna Marie. "Self-evaluation maintenance and competition in close

relationships." *Dissertation Abstracts International* 62. (2001). *PsycINFO*. EBSCO. Web. 5 May 2010.

Burleson, B. R., Kunkel, A. W. & Birch, J. D. (1994). Thoughts about talk in romantic relationships: Similarity makes for attraction (and happiness, too). *Communication Quarterly, 42*(3), 259-273.

Chen, S., Lee-Chai, A. Y., & Bargh, J. A. (2001). Relationship orientation as a moderator of the effects of social power. *Journal of Personality and Social Psychology, 80*(2), 173-187.

Haber, L.C., & Austin, J. K. (1992). How married couples make decisions. *Western Journal of Nursing Research, 14*(3), 322-342.

McGinley, J.M. (2003). *Taking the competition out of romantic relationships: The self-evaluation maintenance model and specialization.* Unpublished honor's thesis, The College of William and Mary, Williamsburg, VA.

Mendolia, M., Beach, S. R. H., & Tesser, A. (1996). The relationship between marital interaction behaviors and affective reactions to one's own and one's spouse's self-evaluation needs. *Personal Relationships, 3*(3), 279-292.

Morewitz, C. (2001) *Maintaining positive self-evaluations in romantic relationships: Conflict avoidance by specialization within performance domains.* Unpublished master's thesis, The College of William and Mary, Williamsburg, VA.

O'Mahen, H. A., Beach, S. R. H., & Tesser, A. (2000). Relationship ecology and negative communication in romantic relationships: A self-evaluation maintenance perspective. *Personality and Social Psychology Bulletin, 26*(11), 1343-1352.

Pilkington, C. J., & Smith, K. A. (2000). Self-evaluation maintenance in a larger social

context. *British Journal of Social Psychology, 39,* 213-227.

Pilkington, C. J., Tesser, A., & Stephens, D. (1991). Complementarity in romantic

relationships: A self-evaluation maintenance perspective. *Journal of Social and*

Personal Relationships, 8, 481-504.

Pleban, R., & Tesser, A. (1981). The effects of relevance and quality of another's

performance on interpersonal closeness. *Social Psychology Quarterly, 44*(3), 278-

285.

Rubin, Z. (1970). Measurement of romantic love. *Journal of Personality and Social*

Psychology, *16*(2), 265-273.

Sagrestano, L. M. (1992). The use of power and influence in a gendered world.

Psychology of Women Quarterly, 16, 439-447.

Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. In L.

Berkowitz (Ed.), *Advances in Experimental Social Psychology* (pp. 181-223). San

Diego: Academic Press.

Tesser, A., Beach S. R. H., Mendolia, M., Crepaz, N., Davies, B., & Pennebaker, J.

(1998). Similarity and uniqueness focus: A paper tiger and a surprise. *Personality*

and Social Psychology Bulletin,24(11), 1190-1204.

Tesser, A., & Campbell, J. (1982). Self-evaluation maintenance and the perception of

friends and strangers. *Journal of Personality, 50*(3), 261-279.

Tesser, A., & Paulhus, D. L. (1976). Toward a casual model of love. *Journal of*

Personality and Social Psychology, 34(6), 1095-1105.

Tesser, A., & Smith, J. (1980). Some effects of task relevance and friendship on helping:

You don't always help the one you like. *Journal of Experimental Social Psychology, 16,* 582-590.

Trivial Pursuit: Team (2009). Pawtucket, RI: Hasbro.

Appendix A

Honors Thesis – Trivia Questions

History

Hint: American History
Question: What decade did the Brooklyn Bridge open?
Answer: 1880s

Hint: American History
Q: Who is credited with founding the American arm of the Red Cross?
A: Clara Barton

Hint: European/World History
Q: Name six wonders of the Ancient World.
A: Pyramids of Egypt, Hanging Gardens of Babylon, Statue of Zeus at Olympia, Temple of Artemis at Ephesus, Mausoleum of Halicarnassus, Colossus of Rhodes, Pharos (Lighthouse) of Alexandria

Hint: European/World History
Q: What flying contraption did brothers Joseph-Michel and Jacques-Etienne Montgolfier invent?
A: Hot air balloon

Hint: American History
Q: What is the better-known name for the "Peoples Temple Agricultral Project", which was located in North-western Guyana?
A: Jonestown

Hint: European/World History
Q: What was the name of the city captured in 1925 and then renamed Stalingrad?
A: Volgograd

Literature

Hint: Written in English
Q: Where in Boston did the duckling family in *Make Way for Ducklings* ultimately decide to live?
A: The Public Garden

Hint: Translation
Q: What classic adventure novel, written by Jules Verne, features a wealthy Englishman who takes a wager to complete a journey?
A: *Around the World in 80 Days*

Hint: Written in English
Q: This villain woos a woman even though he killed her husband and father.
A: Richard III

Hint: Translation
Q: What Russian wrote about his experiences in the gulag, where he went after writing a letter making fun of Stalin?
A: Aleksandr Solzhenitsyn

Hint: Written in English
Q: Name six Jane Austen books.
A: Pride and Prejudice, Sense and Sensibility, Emma, Persuasion, Mansfield Park, Northanger Abbey, Lady Susan, Love and Friendship, The Watsons, Sanditon

Hint: Translation
Q: Considered one of the most important postmodernist works in Spanish literature, what novel was first published by Gabriel Garcia Marquez in 1967?
A: One Hundred Years of Solitude

Famous Modern People

Hint: Actress
Q: Who is the female lead in the hit movie *Pretty Woman*?
A: Julia Roberts

Hint: Singer
Q: What is the name of the first film Madonna appeared in?
A: Desperately Seeking Susan

Hint: Singer
Each of these people has been romantically linked with the previous answer. Start with Carrie Underwood.
Q: Dallas Cowboys quarterback
A: Tony Romo
Q: Daisy Duke
A: Jessica Simpson
Q: "Waiting on the World to Change" singer
A: John Mayer

Hint: Actor
Q: by the age of 13, how many schools had expelled Sylvester Stallone?
A: 14

Hint: Actress
Q: How many times has Elizabeth Taylor been married?
A: 8

Hint: Singer
Q: In 2007, what celebrity had a close shave at Ester's Haircutting Studio?
A: Britney Spears

Art

Hint: 20th century art
Q: Which famous Spanish painter pioneered an art movement known as cubism?
A: Pablo Picasso

Hint: 20th century art
Q: What 20th-century Spanish artist spent most of three years painting outcasts, beggars, and prostitutes?
A: Pablo Picasso

Hint: pre-20th century art
Q: What Italian sculptor created works of art such as the Pieta and the Statue of David?
A: Michelangelo

Hint: pre-20th century art
Q: This painting displays the Virgin Mary, Christ, and Saint John the Baptist and is set in a rocky landscape.
A: Virgin of the Rocks

Hint: pre-20th century art
Q: How many of these paintings are by Leonardo da Vinci? Mona Lisa, The Last Supper, Persistence of Memory, Starry Night, The Garden of Delights
A: two – the Mona Lisa and The Last Supper

Hint: 20th century art
Q: This revolutionary art movement developed out of the Dada activities of WWI and the most important center of the movement was Paris.
A: Surrealism

Cartoons

Hint: Print
Q: What is the name of Garfield's teddy bear?
A: Pooky

Hint: Film
Many cartoon characters are animals. What type of meat would you be eating if you ate:
Q: Bambi A: Venison
Q: Babe A: pork, ham, or bacon
Q: Bullwinkle A: moose

Hint: Print
Q: A favorite of art critics, this U.S. comic strip's hero had an antagonist called Ignatz Mouse
A: Krazy Kat

Hint: Film
Q: What is the name of the cartoon character who was raised by Gorillas?
A: Tarzan

Hint: Film
Q: What is the name of the famous Disney character that replaced Oswald the Lucky Rabbit?
A: Mickey Mouse (originally Mortimer Mouse)

Hint: Print
Q: What Mort Walker comic strip character has a statue at the University of Missouri, which Walker attended?
A: Beetle Bailey

Geography

Hint: Man-made
Q: Name six of the seven modern Wonders of the World as designated by the American Society of Engineers.
A: Channel Tunnel, CN Tower, Empire State Building, Golden Gate Bridge, Itaipu Dam, Delta Works, Panama Canal

Hint: Natural
Q: Name six of the world's 10 biggest islands.
A: Greenland, New Guinea, Borneo, Madagascar, Baffin Island, Sumatra, Honsha, Great Britain, Victoria Island, Ellesmere Island

Hint: Natural
Q: What U.S. state is just south of Rainy River, one of Ontario's westernmost communities?
A: Minnesota

Hint: Natural
Q: What is the largest freshwater lake in the world?
A: Lake Baikal

Hint: Man-made
Q: Which Paris, France, monument is considered "point zero" for measuring highway distances?
A: Notre Dame Cathedral

Hint: Man-made
Q: What would you most likely be taking a picture of, if you find a picture of Mount Lee on your cell phone?
A: The Hollywood Sign

Nature

Hint: Physical
Q: What type of clouds are tornadoes associated with?
A: Cumulus

Hint: Physical
Q: The most devastating tsunami ever recorded (in 2004) killed at least 150,000 people in a dozen countries. In what ocean did it take place?
A: Indian Ocean

Hint: Physical
Q: What snowy mountain range accounts for a large percentage of Northern California's water supply?
A: Sierra Nevada

Hint: Biological
Q: Rainforests used to cover 14% of the Earth's surface. How much do they cover now?
A: 6%

Hint: Biological
Q: What country is the poinsettia native to?
A: Mexico

Hint: Biological
Q: Which animal can lift 50 times its own weight?
A: Ant

Movies

Hint: Color Movie
Q: What 1998 Disney remake marked Lohan's feature debut?
A: The Parent Trap

Hint: Color Movie
Q: Name six of the eight "Pink Ladies" and "T-Birds" in Grease.
A: Rizzo, Marty, Jan, Frenchy, Danny, Sonny, Doody, Kenickie

Hint: Black & White Movie
Q: In what movie does a wheelchair-bound photographer spy on his neighbors?
A: Rear Window

Hint: Color Movie
Q: Name the six numbered Star Wars episodes.
A: The Phantom Menace, Attack of the Clones, Revenge of the Sith, A New Hope, The Empire Strikes Back, Return of the Jedi

Hint: Black & White Movie
Q: In what movie is a hotel taken over by fugitive gangsters while a hurricane is headed their way?
A: Key Largo

Hint: Black & White movie
Q: Name two of the stars of the 1954 Sabrina.
A: Audrey Hepburn, Humphrey Bogart, William Holden, John Williams

Music

Hint: Pop/Rock Music
Q: On the album cover, which Beatle crosses Abbey Road first?
A: John Lennon

Hint: Pop/Rock Music
Q: Who was Elton John singing about in his 1997 version of "Candle in the Wind"?
A: Princess Diana

Hint: Jazz/R&B Music
Q: Who first sang the song that begins, "I see trees of green, red roses, too"?
A: Louis Armstrong

Hint: Jazz/R&B Music
Q: What instrument are Louis Armstrong and Roy Eldridge most known for playing?
A: Trumpet

Hint: Jazz/R&B Music
Q: What soul singer belted out "My Country 'Tis of Thee" at the inauguration ceremony of President Barack H. Obama?
A: Aretha Franklin

Hint: Rock/Pop Music
Q: Which is the most recorded song in U.S. pop music history?
A: "Yesterday" by The Beatles

Sports

Hint: Olympic Sports
Q: What winter Olympic Sport, of Scottish origin, has player positions called Lead, Second, Vice, and Skip?
A: Curling

Hint: US Sports
Q: Which major league sports organization was the last in the U.S. to implement a comprehensive drug testing policy?
A: Major League Baseball

Hint: Olympic Sports
Q: Which gymnast won stardom after vaulting on an injured ankle to help her team win the gold in 1996?
A: Kerri Strug

Hint: US Sports
In 2008, these running backs were in the top ten for yards rushed. True or False?
Q: Peterson – Minnesota Vikings (1760 yards) A: true
Q: M. Lynch – Buffalo Bills (1036 yards) A: false
Q: D. Williams – Carolina Panthers (1515 yards) A: true
Q: L. Tomlinson – San Diego Chargers (1110 yards) A: true
Q: Jacobs – New York Giants (1089 yards) A: false

Hint: Olympic Sports
Q: Who beat whom in the 1980 Olympic "Miracle on Ice"?
A: U.S. hockey team beat U.S.S.R.

Hint: US Sports
I am a large, sanctioned racing series by NASCAR. True or False?
Q: Sprint Cup A: true
Q: Nationwide Series A: true
Q: Craftsman Truck A: true
Q: Goodyear Race A: False
Q: Kentucky Derby A: false

Science

Hint: Physical Science
Q: What element do the sun and stars consist of mostly?
A: Hydrogen

Hint: Biological Science
Q: What part of the brain is responsible for balance?
A: Cerebellum

Hint: Physical Science
Q: What energy is produced when matter and antimatter annihilate each other and/or when you want to turn Bruce Banner into the Hulk?
A: Gamma rays

Hint: Biological Science
This gland is found in your head or neck. True or false?
Q: Pancreas A: False
Q: Salivary gland A: True
Q: Pituitary gland A: True
Q: Adrenal glands A: False
Q: Thymus A: False

Hint: Physical Science
This is a moon in the solar system. True or false?
Q: Pluto A: False
Q: Titan A: True
Q: Ganymede A: True
Q: Ceres A: False
Q: Eris A: False

Hint: Biological Science
This is the percentage of water in me. True or false?
Q: Brian – 75% A: True
Q: Earth's surface – 55% A: False
Q: My body – 60% A: True
Q: My blood – 90+% A: True
Q: My breath – 50% A: False

T.V.

Hint: Reality TV
Q: What cable channel's motto did critic James Wolcott suggest be changed from "We Report. You Decide" to "We Exhort. You Comply"?
A: Fox News

Hint: Characters/Actors
Q: What celebrity chef hosts a show in the UK called "The F-Word"
A: Gordon Ramsay

Hint: Characters/Actors
Q: Name the six Brady kids.
A: Greg, Peter, Bobby, Marcia, Jan, Cindy

Hint: Reality TV
Q: Name six of the first 10 title locations of the TV show Survivor.

A: Borneo/Pulau Tiga, Australian Outback, Africa (Kenya), Marquesas, Thailand, Amazon (Brazil), Pearl Islands (Panama), Vanuatu (Islands of Fire), Palau, Guatemala (Mayan Empire)

Hint: Reality TV
Q: Carrie Underwood won this TV competition.
A: American Idol

Hint: Characters/Actors
Q: Who played President Bartlet on TV for seven seasons?
A: Martin Sheen

Appendix B

Relevance Survey

Below are a number of "performance" areas or topics. Some will be important to you in the sense that you would like to do well at them or know a lot about them. You think of yourself as the kind of person who does well at them; if you didn't do well, it would make you feel bad or perhaps change how you think about yourself. While it us understandable that you may attempt to do well on most of the things that you participate in, certain of these areas will be especially important to your personal identity. So, for example, indicate as Very Important (6) only those areas of interest that are central to how you think about yourself. Others of these areas are probably not very important to you, and will receive lower scores (more toward 1).

Indicate how important each of these items is to you personally, on a scale of 1 to 6 (6 being extremely important to you and 1 being not at all important). Please circle one number for each item.

	Not Very Important				Very Important	
History	1	2	3	4	5	6
Restaurants	1	2	3	4	5	6
Money & Business	1	2	3	4	5	6
Literature	1	2	3	4	5	6
Famous Modern People	1	2	3	4	5	6
Rules of Games	1	2	3	4	5	6
Fashion	1	2	3	4	5	6
Art	1	2	3	4	5	6
Cartoons	1	2	3	4	5	6
Jewelry	1	2	3	4	5	6
Cars	1	2	3	4	5	6
Geography	1	2	3	4	5	6
Nature	1	2	3	4	5	6
Cooking & Recipes	1	2	3	4	5	6
Nutrition	1	2	3	4	5	6
Movies	1	2	3	4	5	6
Music	1	2	3	4	5	6
Pets	1	2	3	4	5	6
Alcohol & Drink Mixing	1	2	3	4	5	6
Sports	1	2	3	4	5	6
Science	1	2	3	4	5	6
Photography	1	2	3	4	5	6
Religion	1	2	3	4	5	6
T.V.	1	2	3	4	5	6

Appendix C

Rubin's Love and Likeness Scale

Instructions: Below you will find a series of statements that describe feelings a person might have about another person. Please read each statement with your current romantic partner in mind. Then rate how well each statement describes your feelings using the following scale:

1	2	3	4	5	6	7	8	9
not at all true; disagree completely				moderately true; agree somewhat				definitely true; agree completely

For example, if a statement reflects your feelings very well, write an 8 or a 9 on your answer sheet beside the number of the statement. If the statement does not describe your feelings at all, write a 1 or a 2. Use the intermediate numbers to indicate ratings between these extremes.

_____ 1.   If _____ were feeling bad, my first duty would be to cheer him/her up.

_____ 2.   I feel that I can confide in _____ about virtually anything.

_____ 3.   I find it easy to ignore _____'s faults.

_____ 4.   I would do almost anything for _____.

_____ 5.   I feel very possessive toward _____.

_____ 6.   If I could never be with _____, I would feel miserable.

_____ 7.   If I were lonely, my first thought would be to seek _____.

_____ 8.   One of my primary concerns is _____'s welfare.

_____ 9.   I would forgive _____ for practically anything.

_____ 10.   I feel responsible for _____'s well-being.

_____ 11.   When I am with _____, I spend a good deal of time just looking at him/her.

_____ 12.   I would greatly enjoy being confided in by _____.

_____ 13.   It would be hard for me to get along without _____.

_____ 14.   When I am with _____, we almost always are in the same mood.

_____ 15.   I think that _____ is unusually well-adjusted.

_____ 16.   I would highly recommend _____ for a responsible job.

_____ 17.   In my opinion, _____ is an exceptionally mature person.

_____ 18.   I have great confidence in _____'s good judgment.

_____ 19.   Most people would react favorably to _____ after a brief acquaintance.

_____ 20.   I think that _____ and I are quite similar to one another.

_____ 21.   I would vote for _____ in a class or group election.

_____ 22.   I think that _____ is one of those people who quickly wins respect.

_____ 23.   I feel that _____ is an extremely intelligent person.

_____ 24.   _____ is one of the most likable people I know.

_____ 25.   _____ is the sort of person whom I myself would like to be.

_____ 26.   It seems to me that it is very easy for _____ to gain admiration.

Appendix D

Post-Experimental Questionnaire

Instructions: Below you will find a series of statements that describe feelings a person might have about another person. Please read each statement with your partner from the experiment in mind. Then rate how well each statement describes your feelings using the following scale:

1	2	3	4	5	6	7
not at all true; disagree completely			moderately true; agree somewhat			definitely true; agree completely

For example, if a statement reflects your feelings very well, write an 6 or a 7 on your answer sheet beside the number of the statement. If the statement does not describe your feelings at all, write a 1 or a 2. Use the intermediate numbers to indicate ratings between these extremes.

___ 1. How much do you like your game partner?

___ 2. Would other people say you and your game partner are similar in general?

___ 3. Do you feel that you and your game partner have anything in common?

___ 4. Would you like to work with your game partner again as part of a team competition?

___ 5. Would you be interested in participating with your game partner in competition against   another team in front of an actual audience simulating game-like conditions?

___ 6. To the extent that you are interested in participating again in this experiment, would you mind being rescheduled with your game partner?

Appendix E

Participant Survey

Gender: _____

Age (years): _____

Race: _____

Length of relationship (months): _____

Are you exclusive? (circle one)   Yes   No

How satisfied are you with your relationship? (circle one)

1	2	3	4	5	6	7
not at all			somewhat			very much

Appendix F

Informed Consent Form

This is to certify that I understand the following information with respect to my participation in Laura Nelson's study:

1. The purpose of this research is to examine teamwork in game theory through the study of romantic partners and strangers.

2. I will be asked to answer a number of questions about myself and then will play a version of Trivial Pursuit, either with my romantic partner or with a stranger.

3. In order to make this study a valid one, some aspects of this study will not be explained to me until after I have completed my participation.

4. I am aware that I must be at least 18 years of age to participate.

5. No discomfort or risk should be experienced from participation in this study.

6. My participation will take approximately one hour.

7. I understand that my answers will be anonymous. My responses will in no way be associated with my name.

8. I will receive a 1.5 hour credit toward my Psyc 201 or Psyc 202 Research Participation requirement. No other incentives are offered.

9. I understand that my participation in this study is voluntary. Furthermore, I may terminate my participation at any point in time without penalty.

10. Questions or concerns regarding the research should be directed to Michael Deschenes at 757-221-2778 or mrdesc@wm.edu.

I agree to participate in this study and have read all the information provided on this form.

Name (please print): _____

Signature: _____ Date: _____

Appendix G

Cover Story

We are interested in game theory, which studies the variables that influence decision making in contests and similar situations. A lot of the research that has been done in this area has made use of a "game" called the Prisoner's Dilemma, which describes a situation where players are being separately interrogated for the same crime and players must either cooperate (stay silent) or deflect from (betray) the other player. Each player only cares about maximizing his or her own outcome and so the rational choice is to always deflect, even though cooperation would be more beneficial. However, there is no way to ensure the other person would cooperate because they are only concerned with their own outcome as well. We have a number of problems with the reliance on the Prisoner's Dilemma in this research. First, all of the research is focused on two individual opponents. Many times contests are between teams. We think this might make a difference. Similarly, in the Prisoner's Dilemma, the same decision is being made repeatedly. In real contests, different problems or questions arise that need to be addressed. The goal of this study is to improve the ecological validity of the research. So, we are going to be playing a version of Trivial Pursuit. Sometimes we are going to be having teams play and other times individuals will be playing. It's important to note that teams usually consist of people that know each other.

For couples: We've asked you to come in today as couples because you know each other well. We are going to be comparing your behavior to the behavior of teams made up of strangers.

For strangers: We've teamed you up with someone you do not know, so we can compare your behavior to the behavior of teams that know each other well. In essence, you will be serving as the control group.

Both: We will also be comparing your behavior as a team to the behavior of individuals.

Appendix H

Verbatim Script

Hello. My name is Laura Nelson and I'm working with Dr. Pilkington on this study. We are interested in game theory, which studies the variables that influence decision making in contests and similar situations. A lot of the research that has been done in this area has made use of a "game" called the Prisoner's Dilemma, which describes a situation where players are being separately interrogated for the same crime and players must either cooperate (stay silent) or deflect from (betray) the other player. Each player only cares about maximizing his or her own outcome and so the rational choice is to always deflect, even though cooperation would be more beneficial. However, there is no way to ensure the other person would cooperate because they are only concerned with their own outcome as well. We have a number of problems with the reliance on the Prisoner's Dilemma in this research. First, all of the research is focused on two individual opponents. Many times contests are between teams. We think this might make a difference. Similarly, in the Prisoner's Dilemma, the same decision is being made repeatedly. In real contests, different problems or questions arise that need to be addressed. The goal of this study is to improve the ecological validity of the research. So, we are going to be playing a version of Trivial Pursuit. Sometimes we are going to be having teams play and other times individuals will be playing. It's important to note that teams usually consist of people that know each other.

For couples: We've asked you to come in today as couples because you know each other well. We are going to be comparing your behavior to the behavior of teams made up of strangers.

For strangers: We've teamed you up with someone you do not know, so we can compare your behavior to the behavior of teams that know each other well. In essence, you will be serving as the control group.

Both: We will also be comparing your behavior as a team to the behavior of individuals.

In this study, you will be playing a version of Trivial Pursuit. You will answer trivia questions either as a team or as an individual in order to move your game piece around the board. Are there any questions? [Experimenter answers any questions]

[Passes out informed consent forms] Please read over your consent form carefully and sign it at the bottom if you wish to participate. Also, if you wish to see the final results of the study, please indicate your e-mail beside your printed name and we will forward you the results. [collect informed consent forms]

[Passes out relevance survey] Next, I would like you to fill out this survey. On the survey, there are a number of "performance" areas or topics. Some will be important to you in the sense that you would like to do well at them or know a lot about them. You think of yourself as the kind of person who does well at them; if you didn't do well, it would make you feel bad or perhaps change how you think about yourself. While it is understandable that you may attempt to do well on most of the things that you participate in, certain of these areas will be especially important to your personal identity. So, for example, indicate as Very Important (6) only those areas of interest that are central to how you think about yourself. Others of these areas are probably not very important to you, and will receive lower scores (more toward 1).

Indicate how important each of these items is to you personally, on a scale of 1 to 6 (6 being extremely important to you and 1 being not at all important). Please circle one number for each item. Do you have any questions? [Pause to answer questions]

[Collects the relevance survey]. OK, now here is how the game is played. First, let's do a coin toss to decide who will go first. Can you call heads or tails? [Tosses the coin] Ok, your team is going to go first. Each team has their own marker and it goes around the board in a clockwise direction. We will alternate which team gets to answer the question and each team only gets one guess. When I ask the question, I will tell you a broad category and a hint about the topic the question concerns. You can then decide within your team if you would like to answer it together for three points or pick one person to answer the question and receive five points, if the question is answered correctly. If the question is answered correctly, you may move your marker the appropriate number of spaces on the board. If the question is answer incorrectly, the team will receive zero points and will not advance on the board. Any questions? [Pause to answer questions, then plays the game until all of the trivia questions have been answered]

OK, that was great! Congratulations to the winner! Now, I just have one or two more surveys for you to fill out. [Passes out the post-experimental questionnaire] In this survey, you will find a series of statements that describe feelings a person might have about another person. Please read each statement with your partner from the experiment in mind. Then rate how well each statement describes your feelings using a scale from 1 to 7. For example, if a statement reflects your feelings very well, write an 6 or a 7 on your

answer sheet beside the number of the statement. If the statement does not describe your feelings at all, write a 1 or a 2. Use the intermediate numbers to indicate ratings between these extremes.

For romantic couples: [Passes out Rubin's Liking and Love Scale] In this survey, you will find a series of statements that describe feelings a person might have about another person. Please read each statement with your current romantic partner in mind. Then rate how well each statement describes your feelings using a scale from 1 to 9. If a statement reflects your feelings very well, write an 8 or a 9 on your answer sheet beside the number of the statement. If the statement does not describe your feelings at all, write a 1 or a 2. Use the intermediate numbers to indicate ratings between these extremes.

[Once the participants have finished the post-experimental questionnaires] OK, I told you that we are studying factors of decision-making in teams and individuals using game theory, in fact, we aren't. Before I explain what we are really studying, did anything about this experiment seem odd to you? [Pause for feedback, if any] What we are really studying is specialization within performance areas in couples.

Research has shown that conflict tends to arise in couples when they are competing in the same performance area. Couples either engage in complementarity where they cede areas that are not related to their self-identity to their partner and allow them to become an expert or they engage in specialization when a performance area is close to both people's self-identity. In specialization, 50% of the performance area's sub-domains are ceded to one partner who is then regarded as the expert and the remaining 50% of sub-domains is ceded to the other person. For example, if both people in a romantic relationship are psychology professors at the same school, one might focus in

social psychology and another in physiological psychology. In this way, they avoid competing and can enjoy the other person's success in their sub-domain. The purpose of this study was to create situations where couples would specialize. We did this by telling you the sub-category and allowing you to either answer the question together or pick an expert and have them answer it alone. Does this make sense? Do you have any questions? [Pause for responses}

There is one more thing I need to ask you to help me with. I have told you some things I need to keep secret in order for the study to be successful. People would overanalyze the situation if they knew that they should be showing specialization or complementarity in certain situations. So, I need your help in keeping the purpose of the study a secret. You probably know people in your class and they may ask what you did and what this experiment is all about. If you could just tell them that it was about decision making in teams as described in game theory and you just played a version of Trivial Pursuit, I would really appreciate it.

Ok, well that's it. Do you have any other questions? [Answer any remaining questions] Thank you very much for your help!

Table 1

Means and Standard Deviations for All Variables

Variable	Mean	Standard Deviation	Number
Frequency of Specialization	22.02%	37.89	56
Frequency of Complementarity	23.62%	20.34	56
Frequency of Female Complementing Behavior	44.44%	42.91	56
Frequency of Male Complementing Behavior	32.25%	39.44	56
Frequency of Divide and Conquer	8.97%	12.92	56
Frequency of Male Answering (LL)	8.72%	15.82	56
Frequency of Female Answering (LL)	7.27%	14.51	56
Frequency of Male Answering (H – male, L - female)	29.44%	32.68	56
Frequency of Female Answering (HL)	4.73%	13.55	56
Frequency of Male Answering (L-male, H – female)	5.46%	12.90	56
Frequency of Female Answering (LH)	17.88%	24.65	56
Frequency of Male Answering (HH)	18.25%	23.21	56
Frequency of Female Answering (HH)	7.68%	13.01	56
Female Post-Experiment Liking Score	29.11	7.54	56
Male Post-Experiment Liking Score	29.30	7.83	56
Female Liking Score (Romantic)	94.36	12.50	28
Male Liking Score (Romantic)	94.68	9.85	28
Female Love Score (Romantic)	96.36	12.67	28

Male Love Score (Romantic)	95.93	10.99	28

Table 2

ANOVA Table for Frequency of Specialization as a Function of Relationship Type

Source of Variation	SS	DF	MS	F	P
Relationship Type	1984.09	1	1984.09	1.39	.24
Error	76964.25	54	1425.26		
Total (Corrected)	78948.33	55			

Table 3

MANOVA Table for Who Answered in the HH Relevance Condition as a Function of Relationship Type

Source of Variation	SS	DF	MS	F	P
Male Answered: Relationship Type	5441.14	1	5441.14	12.14	.001
Error	24200.24	54	448.15		
Total (Corrected)	29641.38	55			
Female Answered: Relationship Type	.05	1	.05	.00	.99
Error	9318.22	54	172.56		
Total (Corrected)	9318.26	55			

Table 4

MANOVA Table for Frequency of Complementarity and Conquer & Divide

Source of Variation	SS	DF	MS	F	P
Frequency of Complementarity: Relationship Type	596.50	1	596.50	1.45	.23
Error	22151.52	54	410.21		
Total (Corrected)	22748.02	55			
Frequency of Conquer & Divide: Relationship Type	329.02	1	329.02	2.01	.16
Error	8856.55	54	164.01		
Total (Corrected)	9185.57	55			

Table 5

Frequency of Who Answered the Trivia Question as a Function of Relevance

Relevance Condition and Who Answered	Mean (%)	Standard Deviation	Number
LL – Male Answered	S: 2.91	S: 7.22	28
	R: 14.52	R: 19.70	28
LL – Female Answered	S: 4.53	S: 11.98	28
	R: 10.02	R: 16.43	28
H-male, L-female - Male Answered	S: 24.12	S: 31.03	28
	R: 34.78	R: 33.97	28
HL – Female Answered	S: 1.79	S: 9.45	28
	R: 7.68	R: 16.33	28
L-male, H-female – Male Answered	S: 2.81	S: 6.43	28
	R: 8.11	R: 16.82	28
LH – Female Answered	S: 16.50	S: 22.47	28
	R: 19.26	R: 26.99	28
HH Male Answered	S: 8.39	S: 11.51	28
	R: 28.11	R: 27.64	28
HH Female Answered	S: 7.71	S: 14.12	28
	R: 7.65	R: 12.07	28

Note: S = stranger pair and R = romantic couple

Table 6

Tests of Within – Subject Contrasts: Repeated-Measures ANOVA Table for Who
Answered (Male vs. Female) as a Function of Relevance and Relationship Type

Source	Relevance Conditions	SS	DF	MS	F	P
Who Answered	LL	116.87	1	116.87	.22	.64
	HL	34209.51	1	34209.51	22.63	.00
	LH	8637.86	1	8537.86	9.84	.003
	HH	6254.06	1	6254.06	8.41	.005
Relationship Type	LL	522.77	1	522.72	.99	.33
	HL	318.25	1	318.25	.22	.64
	LH	90.78	1	90.78	.10	.75
	HH	5472.73	1	5472.73	7.36	.01

Table 7

MANOVA Table for Frequency of Complementarity as a Function of Gender

Source of Variation	SS	DF	MS	F	P
Male Complemented: Relationship Type	8.94	1	8.94	.01	.94
Error	85545.46	54	1584.18		
Total (Corrected)	85554.40	55			
Female Complemented: Relationship Type	1376.40	1	1376.40	.744	.39
Error	99897.32	54	1849.95		
Total (Corrected)	101237.72	55			

Table 8

Female Factor Leadings for the Post-Experiment Liking Index

Post-Experiment Liking Question	Factor Loading
How much do you like your game partner?	0.84
Would other people say you and your game partner are similar in general?	0.76
Do you feel that you and your game partner have anything in common?	0.87
Would you like to work with your game partner again as part of a team competition?	0.91
Would you be interested in participating with your game partner in competition against another team in front of an actual audience simulating game-like conditions?	0.75
To the extent that you are interested in participating again in this experiment, would you mind being rescheduled with your game partner?	0.54

Note. Eigenvalue = 3.72. Proportion of variance = 0.87

Table 9

Male Factor Loadings for the Post-Experiment Liking Index

Post-Experiment Liking Question	Factor Loading
How much do you like your game partner?	0.84
Would other people say you and your game partner are similar in general?	0.65
Do you feel that you and your game partner have anything in common?	0.81
Would you like to work with your game partner again as part of a team competition?	0.86
Would you be interested in participating with your game partner in competition against another team in front of an actual audience simulating game-like conditions?	0.83
To the extent that you are interested in participating again in this experiment, would you mind being rescheduled with your game partner?	0.55

Note. Eigenvalue = 3.51. Proportion of variance = 0.84.

Figure 1

Who Answered the Trivia Question as a Function of Relationship Type (HH Condition Only)
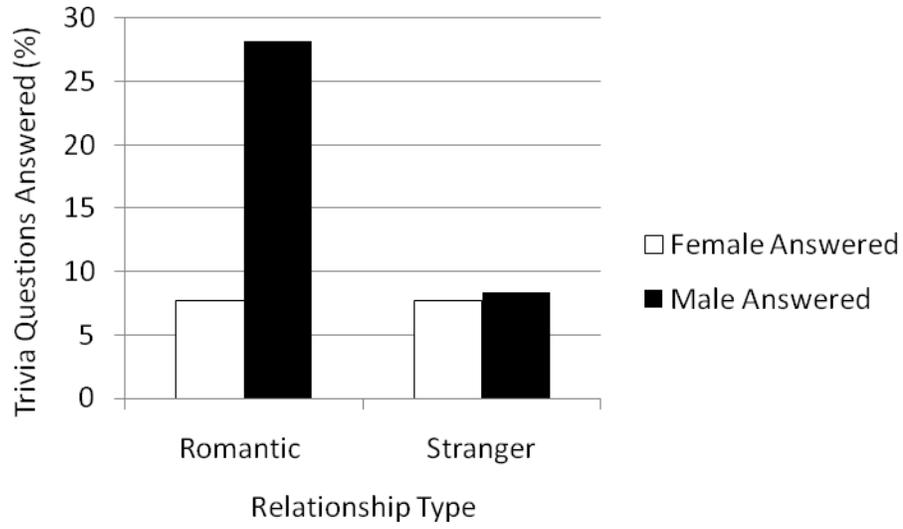
Figure 2

Who Answered the Trivia Question as a Function of Relevance Across Relationship Type