How Competitive are Female Professionals? A Tale of Identity Conflict

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1. INTRODUCTION

Despite continuous improvements over the last few decades, women are still earning less than men in the US and in many other countries (Blau and Kahn, 2000; 2006 for the US; Drolet, 2001 for Canada; Weichselbaumer and Winter-Ebmer, 2005 present a meta-analysis of 263 wage-gap studies for many different countries). This is true not only for women in general, but also for those who have graduated from top MBA programs, presumably with the aim of pursuing ambitious managerial/professional careers (Babcock and Laschever, 2003; Bertrand, Goldin and Katz, 2010; Carter and Silva, 2010). Moreover, female executives and MBA graduates occupy fewer seats in corporate boardrooms and are under-represented in many high-profile jobs compared to men (e.g., Bertrand and Hallock, 2001; Pfeffer, 2010).

An extensive literature spanning economics, management, sociology and psychology seeks to explain these gender-based disparities in pay and promotion (e.g., Polachek 1981; Wennerås and Wold, 1997; Goldin and Rouse, 2000; Black and Strahan, 2001; Babcock and Laschever, 2003; Bertrand, Goldin and Katz, 2010; Carter and Silva, 2010; Pfeffer, 2010). In this study, we build on two recent strands of this literature. One of these strands uses laboratory experiments to demonstrate that male students choose to participate in highly competitive high-stakes tournaments more frequently than female students in both the United States (Niederle and Vesterlund, 2007) and France (Datta Gupta, Poulsen, and Villeval, 2011). Moreover, Gneezy, Leonard, and List (2009) show that while males choose a competitive tournament more often than females among the patriarchal Maasai of Tanzania, females are more inclined than males to compete among the matrilineal Khasi of India. These contrasting behaviors highlight the importance of nurture and suggest that societal norms such as culture-specific gender roles and stereotypes may be important factors in explaining the differing attitudes of males and females toward competition.

According to gender role theory (Eagly and Karau, 2002), gender stereotypes originate from the social roles that men and women have traditionally occupied in a society. Stereotypes are learned early in life, become part of one's cultural understanding, and are internalized as implicit beliefs and endorsed values. People extend such stereotypes to develop implicit self-concepts, which are evidenced by automatic associations between the self and stereotypical personality traits, abilities and roles (e.g. Devos, Blanco, and Dunn, 2008). Such stereotypes are

likely closely related to the differing preferences for competitive tournaments demonstrated by men and women in the lab.

The other important strand of the literature focuses on the contrasting effects of marriage, motherhood and fatherhood on pay and career advancement. Weichselbaumer and Winter-Ebmer (2005) demonstrate in their meta-analysis of 263 wage-gap studies that the male-female differential is significantly lower for single than for married employees across many countries and regions. An example of such a study is by Drolet (2001), who shows that in Canada the observed ratio of female to male wages is 0.96 for single, never-married persons, but 0.77 for those who are married. Parenthood is particularly important in this regard. Indeed, a substantial motherhood wage penalty has been documented for the United States (e.g., Waldfogel, 1997; 1998a; 1998b; Lundberg and Rose, 2000; Budig and England, 2001; Anderson, Binder, and Krause, 2002; 2003; Edwards, 2005) and many other countries (Joshi, Paci and Waldfogel, 1999; Todd, 2001; Phipps, Burton, and Latheridge, 2001; Harkness and Waldfogel, 2003; Kunze and Ejrnaes, 2004; Sigle-Rushton and Waldfogel, 2007a; 2007b; Molina and Montuenga, 2009). In contrast, a significant fatherhood wage premium has also been observed (e.g., Lundberg and Rose, 2000; 2002; Glauber, 2008; Hodges and Budig, 2010). Moreover, Glass (2004) and Budig (2010) argue that the gender gap among employees with similar experience, education, training and jobs is actually a parenthood gap caused by the combination of a motherhood penalty and a fatherhood premium. Caranci and Gauthier (2010) make the same argument for Canada.

What are the reasons for such a parenthood gap? Budig and England (2001) show that about one third of the motherhood penalty is explained by differences in job experience between mothers and women without children. They attribute the remaining two thirds to a combination of productivity differences and discrimination. A large number of experimental and survey studies point to discrimination as an important factor (see Benard, Paik, and Correll, 2008 for an excellent review of this literature). For example, Correll, Benard, and Paik (2007) show that both student evaluators and real employers discriminate against mothers relative to females without children. In particular, student evaluators, when asked to compare two fictitious job applicants with otherwise equal qualifications, rated the mothers as significantly less competent and less committed to work than the females without children. They also recommended significantly lower salaries for the mothers. In contrast, fathers were considered significantly more committed to work, and raters recommended a significantly higher salary for them than for males without

children. Real employers called back job applicants who were mothers significantly less often than females who were not parents. This was not true for males.

A number of different models have been used to explain such discrimination (Benard, Paik, and Correll, 2008). They have in common the idea that people, including those responsible for hiring and salary decisions, have conflicting notions regarding the characteristics of a good mother versus those of a good employee (e.g., Blair-Loy, 2003). According to this view, a good mother is required to be warm, caring, and committed first to her family, implying less commitment to her job. In contrast, a good employee must be devoted, competent and committed to work. Using questionnaire-based experimental data, Cuddy, Fiske, and Glick (2004) argue that when female employees become mothers, others perceive them as warmer but less competent. Males however do not face this trade-off when becoming fathers, gaining perceived warmth, while retaining perceived competence.

In this paper, we argue that such conflicting ideals regarding work and family life for females may affect not only the decisions of potential employers, but also the behavior of female employees themselves. If motherhood blunts a woman's competitive edge, her behavior not only in the family but also in the workplace may be affected. If so, the effects of motherhood on workplace behavior may be such as to reinforce the very discrimination that such women receive. We focus on women who have chosen to pursue a highly competitive managerial career. Our argument is that such women often experience conflicting role identities: a professional identity that is highly competitive, competent and ambitious and a gender/family identity that is warm, supportive and caring. We demonstrate that when activated by subtle psychological priming, each of these identities can have a significant impact on whether such women will choose to participate in a competitive tournament with high-powered financial incentives. In contrast, for otherwise similar males, we show that identical priming has significantly different effects. Females primed with the gender/family identity are significantly less competitive than those primed with the professional identity, while males primed with the gender/family identity are not. Under some circumstances, males primed with the gender/family identity are in fact significantly more competitive than those primed with the professional identity.

Although such priming effects may be short-term in nature, these results suggest that life-cycle events such as marriage, pregnancy, and parenthood could have very substantial and long-lasting effects on the activation of family identities with their consequent effects on attitudes

toward competition. Thus, the decision to avoid or minimize competition made by many women in professional careers may be driven not by lack of ability but rather by the increased salience of the gender/family identity, based on stereotypical beliefs, attitudes and ideals over time.

2. EXPERIMENTS ON GENDER AND PREFERENCE FOR COMPETITION

Niederle and Vesterlund (2007) (henceforth NV) examined whether males and females differ in the type of compensation scheme they prefer, while holding the task characteristics constant. Since our experimental design shares some common features with the NV study, we describe it in some detail. NV employed a real-effort task, involving the addition of as many sets of five two-digit numbers as possible in a five-minute time interval. Males and females showed no significant differences in performance, whether working under an imposed piece-rate or imposed tournament compensation scheme. Although participants received feedback on their absolute performance, they received no feedback about their performance relative to the other members of their group. All groups consisted of two men and two women. After the two imposed rounds, the participants were given a choice of compensation scheme for the same task. The results are striking. Despite the similar performance, 73% of males chose to enter the tournament, while only 35% of women chose to do so. NV find that this gender gap in tournament entry was driven both by greater male overconfidence relative to females and by different preferences for competition associated with each gender. In contrast, the experiment provides negligible evidence for either risk or feedback aversion having an impact on such decisions.

In a related study Gneezy and Rustichini (2006) compared self-selection of men and women into a competitive environment using two tasks: shooting baskets, intended to favor males, and solving anagrams, intended to favor females. They found that the proportion of participants choosing the competitive environment was higher for males than that for females in both scenarios, but that the difference was smaller in the task that favored women. Datta Gupta, Poulsen, and Villeval (2011), who use a maze-solving task and examine mixed-sex versus same-sex competition, provide further support for the competitiveness finding. Sutter and Rutzler (2010) show that such a gender gap is present even for three-year olds, indicating that gender differences in competitiveness emerge very early in life. However, Price (2011) was unable to replicate NV's competitiveness result, using a seemingly identical experimental design.

Other recent studies examine factors that mediate the relationship between gender and preference for competition (e.g., Vandegrift and Yavas, 2009; Gill and Prowse, 2011; Balafoutas,

Kerschbamer, and Sutter, 2012) and tasks and environments that mitigate this relationship (e.g., Niederle, Segal, and Vesterlund, 2008; Dargnies, 2009; Vandegrift and Yavas, 2009; Balafoutas and Sutter, 2010; Flory, Leibbrandt, and List, 2010; Healy and Pate, 2012; Andersen, Ertac, Gneezy, List, and Maximiano, 2011; Ertac and Szentes, 2011, Müller and Schwieren, 2011). As already noted in the introduction, Gneezy, Leonard and List (2009) provide strong evidence that culture-specific gender roles and stereotypes play an important role in determining whether males or females prefer competition. In contrast, Wozniak, Harbaugh and Mayr (2010) suggest that biological factors may matter. They show in a laboratory experiment that females are more likely to avoid competition during the low-hormone phase of their menstrual cycle, while during the high-hormone phase their revealed preference for competition is not significantly different from those of the males in the study. As argued by Datta Gupta, Poulsen, and Villeval (2011), this does not provide conclusive evidence of a biological underpinning to the differing preferences of men and women. It may instead represent a reaction primed by the onset of menstruation, which occurs during the low-hormone phase of the cycle.[1] None of these papers explicitly examines how conflicting gender/family and professional identities among females pursuing a professional career in a developed, industrialized country may influence self-selection into more or less competitive environments. We use the priming methodology developed in psychology and exploited by both psychologists and economists to study issues of identity to tackle this important issue.

3. PRIMING OF GENDER/FAMILY AND PROFESSIONAL ROLE IDENTITIES

Identity theory (e.g., Burke, 1980; Stryker, 1968) focuses on the role positions that people occupy in society and emphasizes the impact of those positions on peoples' self-concepts. In particular, each role position is linked with a distinct role identity. A role identity encompasses a set of normative expectations, which in turn prescribe role-congruent behavior (e.g., Eagly and Karau, 2002). Satisfactory enactment of roles can positively enhance feelings of self-esteem and self-evaluation (Stryker and Serpe, 1982). Together, a person's multiple role identities define and

[1] A related literature shows that on some tasks males perform no better than females under non-competitive circumstances, but do significantly better in a competitive context (e.g., Gneezy, Niederle, and Rustichini, 2003; Gneezy and Rustichini, 2004; Datta Gupta, Poulsen, and Villeval, 2011). Guenther et al. (2010) suggest that such a result is moderated by the nature of the task. In particular, they demonstrate that while this result holds for stereotypically male tasks, it is reversed for stereotypically female tasks. Another related study is Price (2012), which demonstrates that in a laboratory experiment, males assigned the role of manager and, given information about worker ability, choose a tournament pay scheme for females less often than for males playing the worker role. This is not true when no information about worker ability is provided.

give meaning to the self. The likelihood that a particular role identity will affect one's behavior in a given situation is called identity salience (Stryker, 1987). Exposure to a priming stimulus can make one identity more salient than others, thereby affecting a person's subsequent behavior. The power of identity priming in influencing behavior was first demonstrated in social psychology. For example, Shih, Pittinsky, and Ambady (1999) showed that Asian-American women performed better on a mathematics test when their ethnic identity was activated and worse when their gender identity was activated than a control group. They activated Asian identity and the identity-related stereotype that Asians are better at math by administering a questionnaire concerning ethnic heritage to one group of subjects immediately prior to the math test. Similarly, they activated gender identity and the corresponding gender-identity stereotype that females are worse at math by administering a questionnaire concerning gender to another group prior to the test. Such a priming effect can occur automatically and without conscious awareness (Kawakami, Young, and Dovidio, 2002).

Economists have also become increasingly interested in the notion of identity, applying identity models to various aspects of economic decision-making (e.g., Akerlof and Kranton, 2000; 2002; 2005; 2008; Basu, 2005; 2010; Chen and Li, 2008; Benabou and Tirole, 2011; Chen and Chen, 2012). In recent years a number of economics experiments have successfully used priming to study the effects of race and ethnicity (Benjamin, Choi, and Strickland, 2010; Chen, Li, Liu, Shih, 2010), urban status (Afridi, Li, and Ren, 2011) and religion (Benjamin, Choi, and Fisher, 2010) on various aspects of economic behavior. Benjamin, Choi, and Strickland (2010) provide a nice model of the relationship between priming and identity, which demonstrates how priming can reveal the marginal effect of increasing the salience of a particular identity.

We use the idea that role identity has the potential to drive an individual's behavior, and conjecture that women's entry decisions into high-powered tournaments may be influenced by their professional (competitive) and family (care-giving and non-competitive) roles, which may be in conflict with each other. To test our conjectures, we expose our participants to a priming stimulus that can make one identity more salient than the other and thus create exogenous variation in the saliency of gender/family role identities. Our focal hypothesis is that professionally oriented females and males who receive professional priming will demonstrate no difference in their propensities to select into a competitive tournament. However, exposure to gender/family priming will have different effects on the females relative to the males, opening up

a gender gap in preference for competition. In particular, under such priming, we predict that females will show a lower propensity to select into a competitive pay scheme relative to their choices under professional priming. While gender/family priming may cause males to become more competitive, as suggested by some of the explanations for the fatherhood premium, professional priming is also likely to promote competition. Thus, we make no prediction about the direction of the priming effect on males, hypothesizing only that the probability of a female making a competitive choice will decrease (increase) significantly more than the comparable male probability when participants receive gender/family (professional) rather than professional (gender/family) priming. We also examine beliefs about whether one has ranked first in a previously played tournament as a potential mediating variable to determine the extent to which identity priming works by affecting such beliefs, which may be linked to the relative salience of gender/family versus professional identity.[2] Finally, we look at whether identity priming has similar effects on the selection of a risky gamble, the outcome of which is completely random, and on submission of a previous performance to a tournament-based compensation scheme. Our main hypotheses are as follows:

Hypothesis 1: Males are more likely than females to enter a competition under gender/family priming.

Hypothesis 2: Males and females are equally likely to enter a competition under professional priming.

Hypothesis 3: Females under professional priming are significantly more likely to enter a competition than females under gender/family priming.

Hypothesis 4: Gender moderates the relationship between priming and preference for competition. In particular, the effect of receiving professional versus gender/family priming on increasing the probability of a competitive choice is lower for males than for females.[3]

Hypothesis 5: The relationship between priming, gender, and preference for competition is mediated by confidence in one's ability to win a tournament as expressed in beliefs about whether one has previously finished first in such a competition.

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[2] A mediating model hypothesizes that the independent variable affects the mediating variable, which in turn affects the dependent variable. Mediation may be either partial or complete. In the former case, there is both a direct and an indirect effect of the independent variable on the dependent variable. In the latter case, the independent variable affects the dependent variable only indirectly through the mediator (MacKinnon, 2008).

[3] A moderating variable statistically interacts with another independent variable in affecting the dependent variable (Cohen, Cohen, Aiken & West, 2003).

4. METHODS

4.1 Participants, Experimental Site and Task

We conducted our experiment at the Rotman School of Management at the University of Toronto. Rotman is widely regarded as one of the world's most prestigious and elite business schools according to many global rankings. We recruited participants from the population of full-time MBA students at Rotman. These students all had several years of managerial experience prior to entering the MBA program, and by entering the program had put themselves on a highly competitive career track. We focused on this population because we were seeking to examine the hypothesized conflict between professional and gender/family identities among highly talented, ambitious and career-oriented women in comparison with similarly talented and ambitious men. Applying laboratory methods to a particular population that has a special relevance to the purpose of a study has been termed an artefactual field experiment (Harrison and List, 2004). Such an approach occupies an important middle ground between a laboratory experiment and naturally occurring field data.

Potential participants were recruited by means of an email solicitation through the MBA program listserv. They were told that they would be participating in a study about workplace issues and that they would be paid. They were not given any other details prior to the experiment. One hundred and thirty-two full-time MBA students participated in the study (66 men and 66 women) with an average age of 28 years and a standard deviation of 2.91 years. A real-effort task previously used in the literature to examine similar issues was employed in this study (e.g., Niederle and Vesterlund, 2007). It is an arithmetic task involving the addition of as many sets of five two-digit numbers as possible in a set time frame. This arithmetic task was selected because several recent meta-analytical papers have shown that there is no gender difference in performance on such a simple arithmetic task (e.g., Else-Quest, Hyde and Linn, 2010 and Hyde, Fennema, and Lamon, 1990). This differs from more complex mathematical tasks such as those from the Canadian Math Competition used by Shih, Pittinsky and Ambady (1999), in which males perform better on average than females. The numbers for the arithmetic task were randomly generated on the computer. However, the experiment itself was done using paper-and-pencil.

The focus of the experiment is to examine whether gender/family identity and/or professional identity, both of which are activated through priming, might have differing impacts

on preference for competition between female and male MBA students. Some previous studies examining the differing impacts of priming two types of identity or decision-making styles compare both types to a control group that was not primed (e.g., Shih, Pittinsky, and Ambady, 1999). Others compare the differing impacts resulting from the two primes to each other so that each acts as a control for the other (e.g., Zhong, 2011). The nature of our research question calls for the latter approach. People all have identities, which influence the way they think and act. It is not possible either in the lab or in the field to have an identity-free situation. Thus, a treatment with no priming of any specific identity creates a situation where researchers have no way of identifying whether or to what extent an identity or multiple identities may be influencing people's behavior. The potentially differing impacts of gender/family and professional identity on preference for competition among male versus female MBA students can be most directly compared by contrasting each priming treatment with the other rather than by comparing each to a no priming alternative in which the impact of different possible identities is neither observed nor controlled.

Priming was implemented by administering a questionnaire at the very beginning of an experimental session prior to giving participants any instructions about the task or the experimental procedures. About half of the participants (30 men and 30 women) received a questionnaire on gender- and family-related concerns at that time, while the rest (36 men and 36 women) received a questionnaire concerning their MBA program and professional career planning issues. After completing the experimental task, the questionnaire not completed prior to the task was administered. Sample items included "what is your gender?" and "do you have children?" for the former questionnaire and "what is your GMAT score?" and "What is your salary expectation upon the completion of your degree?" for the latter one.[4] Preference for competition was measured through the type of compensation scheme selected by a participant while holding the task characteristics constant.

4.2 Experimental Procedure

We ensured that in every session, there were equal numbers of men and women. Following NV, participants were then divided randomly into groups of four with two men and two women in each group. Gender was never explicitly mentioned, but participants could see each other and thus observe the gender composition of their own group. Four sessions were

[4] The full questionnaires are presented in the appendix.

conducted. Two sessions started with the gender/family-priming questionnaire, while the other two began with the professional-priming questionnaire.

After completing the questionnaire, each participant received instructions about the arithmetic task. The experimental instructions were read aloud to the participants while they followed along on their own copies. The instructions informed the participants that they would begin by playing a two-minute warm-up round and subsequently play several five-minute experimental rounds. The warm-up round was designed to familiarize participants with the experimental procedure and the real-effort task. They were not told exactly how many rounds they would play, but they were told that only one of the experimental rounds would be selected at random at the end of the session for payment. This design feature was implemented so that money earned in one round did not affect behavior in a subsequent round, and that each round was considered independent and equally important. Lastly, participants were informed that they would receive a $10 show-up fee above and beyond their earnings from the task.

Each participant was provided with a prepared workbook. For each round, the first page in the workbook explained which compensation scheme/condition would apply to the upcoming round. Participants were not permitted to look ahead to future pages or to go back to previous pages. They were only allowed to tear off one page and look at the next when instructed to do so by the experimenter. After each round, each participant's workbook page was collected by the experimenters and taken to another room where the number of correct answers was calculated. Participants received feedback after each round on the absolute number of questions they had answered correctly, but not on their ranking relative to the other participants in their group. The compensation schemes available for each experimental round were as follows:

Round 1 – First Self-Selection of Piece-Rate or Tournament Pay (SS1)

Participants were asked to decide which one of the two following compensation methods they would like to use for calculating their earnings for Round 1.

Method A: Participants would earn $4.00[5] for each problem solved correctly. Thus, total earnings for the round would be: $4.00 × the number of problems solved correctly. Since pay depended only on one's own performance, there was no competition with others.

Method B: One's payment would depend on one's performance relative to that of the other three

[5] All dollar amounts are in Canadian dollars, which were roughly at par with US dollars at the time the study was conducted.

participants who were sitting in the same row. If one solved more problems than the other three persons, one would earn $16.00 for each correctly solved problem. Thus, total earnings for the round would be: $16.00 × the number of problems solved correctly. However, if one's performance was ranked second, third, or fourth among the participants in the row, one would earn $0 regardless of the number of problems solved. If there were ties, the winner would be determined randomly from among those who were tied for the best performance. Since a participant received a very high rate of compensation, but only if ranked first out of the four participants, this pay scheme was highly competitive. Notice that a person choosing this scheme must do better than the other three participants to receive compensation regardless of which scheme was chosen by those participants.[6]

Round 2 – Imposed Piece-Rate Pay

Participants were informed that Method A would be used for calculating earnings for Round 2. This gave all participants experience with the piece-rate compensation scheme, and allowed us to compare the performance of males and females under this pay scheme.

Round 3 – Imposed Tournament Pay

Participants were informed that Method B would be used for calculating earnings for Round 3. This gave all participants experience with the tournament compensation scheme, and allowed us to compare the performance of males and females under this pay scheme. For half of the participants, rounds 2 and 3 were administered in reverse order to control for order effects from learning or other factors.

Round 4 – Second Self-Selection of Piece-Rate or Tournament Pay (SS2)

Participants received the same instructions as in Round 1 (SS1). This second self-selection (SS2) was designed to determine whether choices changed or remained the same after experience under both pay schemes. Cadsby, Song and Tapon (2007) showed that participants in a real-effort experiment became better at choosing the most beneficial pay scheme for themselves after experiencing each of the pay schemes even in the absence of feedback on their performance. In this study, we give each player feedback on their absolute, but not on their relative performance.

[6] A potential problem with this approach might arise if participants were to perform systematically better under one scheme than under the other. In that case, one's self-selection into a tournament or piece-rate scheme might depend in part on one's beliefs about how many other people in one's group would choose each scheme. However, there was no such systematic difference. Neither males nor females in either treatment or in aggregate showed any significant differences in performance between the imposed tournament and imposed piece-rate schemes discussed below.

Round 5 – Self-Selection of Piece-Rate or Chance Pay (SSC)

Tournaments not only involve competition. They also involve financial uncertainty or risk. In our study, the selection of a tournament involved greater financial uncertainty than the selection of piece-rate compensation. In order to identify the role played by risk-aversion, we employed a self-selection round of chance pay. Specifically, participants were asked to decide which one of the following two compensation methods they would like to use for calculating their earnings for Round 5.

Method A: Participants would earn $4.00 for each problem solved correctly. Thus, total earnings for the round would be: $4.00 × the number of problems solved correctly.

Method C: There would be a 25% chance of earning $16.00 for each problem solved correctly. There would be a 75% chance of earning $0 regardless of the number of problems solved correctly.

Since the expected earnings from Method A and Method C are identical, a risk-averse person would choose Method A to avoid all risk, while a risk-loving person would choose Method C. A risk-neutral person would be indifferent between the two choices. Method C is identical to Method B under the assumption that each participant has a 25% chance of ranking first. Thus, it allowed us to separate attitudes toward financial risk or uncertainty from confidence in one's ability and attitudes toward competing with others. By isolating the risk characteristics of a tournament, we are able to examine whether identity priming affects such risk attitudes.

Round 6 – Self-Selection of Piece-Rate or Tournament Pay based on Past Piece-Rate Performance (PSS)

Participants were told that they did not need to perform in Round 6. Rather if this round were randomly selected for payment, their earnings would depend on the number of correct answers they provided in Round 2, i.e. the imposed piece-rate pay round. Each participant was asked to decide whether s/he would like Method A or Method B applied to her/his past piece-rate performance to determine her/his earnings. NV employed such a condition to separate the various factors that might affect the choice between tournament and piece-rate compensation (e.g. risk attitude, feedback aversion, and overconfidence) from a preference for the act of competing itself. Our focus was to examine the extent to which identity priming affects selection into such a "near tournament" that did not involve actually having to compete since it was based solely on past performance in a non-competitive setting.

Round 7 – Self-Selection of Piece-Rate or Tournament Pay based on Past Tournament Performance (TSS)

Participants were told that they did not need to perform in Round 7. Rather if this round were randomly selected for payment, their earnings would depend on the number of correct answers they provided in Round 3, i.e. the imposed tournament pay round. Each participant was asked to decide whether s/he would like Method A or Method B applied to her/his past tournament performance to determine her/his earnings. This provides an alternative measure of the extent to which identity priming affects the choice between tournament and piece-rate compensation in a near tournament that does not involve competing in the future. It may, however, differ from the Round-6 (PSS) measure if participants felt differently about their past performance relative to others under an imposed tournament than they did about their past performance relative to others under an imposed piece rate. Note that for those participants for whom Rounds 2 and 3 were administered in reverse order, Rounds 6 and 7 were administered in reverse order as well.

Rounds 2, 3, 4 and 6 are similar in design to NV. However, NV did not examine identity priming. Moreover, in NV's self-selection treatment, participants choosing the tournament competed against the other participants' performances in the imposed tournament round rather than against their contemporaneous performances. We chose to use contemporaneous performances for all participants because of the possibility of performance improvement through learning over time.

4.3 Post-Experiment Questionnaires

After participants completed the experimental task, they filled out a questionnaire in which they responded to a number of demographic questions. Neither GMAT score nor any of the demographic characteristics (i.e., marital status, managerial experience, target salary, age, or having children) was significantly different between those participants randomly assigned to the gender/family priming treatment and those randomly assigned to the professional priming treatment. We also included belief-assessment questions, which asked participants to guess their ranking relative to the other participants in their group in the first four rounds. Each participant was asked to pick a rank between one and four, and was paid $4 for a correct guess if that round was selected for payment.

At the end of the experiment, a number from one to seven was drawn to determine which

of the seven rounds was utilized to pay participants. The experiment lasted about an hour and participants earned on average $73, inclusive of a $10 show-up fee. All participants were paid privately. The relatively high level of compensation was an important feature of the experimental design. The MBA students who participated in our sessions pay a very high tuition for their education and have high expected earnings. The high-powered financial incentives we provided were meant to ensure that they were highly motivated. In fact, participants appeared focused and enthusiastic, and worked diligently throughout the experimental session.

5. RESULTS

5.1 Data Overview and Task Performance

Table 1 and Figure 1 provide a summary of the experimental results by priming treatment and gender. Priming appears to have a dramatic influence on self-selection into a competitive tournament. Under gender/family priming, 37% of males and just 7% of females selected into the tournament in round 1 (SS1) prior to any experience or feedback on absolute performance. In contrast, under professional priming, 25% of both male and female participants chose the tournament. In round 4 (SS2), after experiencing both the imposed piece-rate and imposed tournament payment schemes, the comparable numbers are 37% of males compared to 10% of females under gender/family priming and 17% of males versus 31% of females under professional priming. The results are similar for rounds 6 and 7 (PSS and TSS) in which participants decided whether to submit a prior performance to a tournament or piece-rate compensation scheme. Fewer people selected into chance pay in round 5 (SSC), but the impact of priming appears similar to its effect in the tournament and near-tournament rounds.

Surprisingly, males performed better than females regardless of payment scheme or priming treatment. This contrasts with NV, who found no differences in performance under either compensation scheme between male and female undergraduates. Table 2, which shows the means and correlations between the demographic variables, sheds some light on this issue.[7] In this sample of MBA students, maleness is correlated with higher GMAT scores, more managerial experience, higher salary expectations, being older and having children. This is due to a combination of applicant pool demographics and the admission policies of the MBA program, which are intended to ensure a substantial number of female students. The relative paucity of

[7] As noted in the text above, there was no significant difference for any of these demographic variables between treatment groups.

qualified female applicants may of course reflect the general tendency of many women to avoid competitive situations, documented in NV and Datta Gupta et al. (2011).

Insert Figure 1and Table 1, 2, and 3 about here.

These factors, particularly the higher average GMAT scores for men, suggest that the men in our sample from this particularly competitive managerially oriented population, may on average have greater ability at performing the experimental task than the females. Table 3 reports the results from two regressions using imposed tournament performance and two regressions using imposed piece-rate performance as the dependent variable. In each case, Model 1 contains three independent variables: a gender dummy variable that is 0 for females and 1 for males, a treatment dummy variable that is 0 for the gender/family priming treatment and 1 for the professional treatment, and an interaction between the two dummy variables. Under both compensation schemes, only the coefficient on male is significant (p=0.013 and 0.051 respectively). This both confirms the impression from the data summary table that males perform better than females, and indicates that the priming treatment made no significant difference in this respect. Model 2 adds GMAT score to the other independent variables.[8] The GMAT score is highly significant in both cases (p=0.015 and 0.021 respectively). Moreover, once we control for GMAT score as a proxy for ability, the coefficient on the male dummy variable is no longer significant in either case.

5.2 Preference for Competition and its Determinants in Rounds 1 and 4

We begin to investigate self-selection into a competitive tournament using the first self-selection in round 1 (SS1) as the dependent variable. Since this is a binary categorical variable, we estimate a logit regression model.[9] The results are reported in Table 4. For Model 1, the independent variables are the male dummy, the professional-priming dummy and their interaction, coded as in Table 3. Model 2 controls for individual ability by adding GMAT score. We also estimated a similar model using actual performance in the imposed tournament round as a proxy for ability. The results, while not identical, were qualitatively similar for this and for the

[8] Of the 132 participants in the study, 16 did not answer the question concerning their GMAT scores. Thus, the number of observations falls from 132 to 116 when GMAT score is included as an independent variable. We also reestimated Model 1 using data from only these 116 participants. The results were qualitatively the same as when all 132 observations were used to estimate Model 1. This is also true for all of the subsequent statistical analysis reported in this paper.

[9] Alternatively, we could use a Probit model. Probit gives almost identical results for all of the logit estimations reported in the paper.

subsequent models using GMAT as an ability proxy.[10] Using performance rather than GMAT score as a proxy for ability is however potentially problematic for at least two reasons. First, performance in the imposed tournament occurred after SS1 and therefore could be affected by the SS1 choice. For example, a person choosing the tournament in SS1 would have experienced a tournament prior to the imposed tournament round whereas a person choosing the piece rate in SS1 would not have. These different experiences could potentially influence performance in the imposed tournament round, obscuring the hypothesized causal relationship between ability and one's choice of compensation scheme. In contrast to performance in the imposed tournament, GMAT score is clearly an exogenous variable relative to selection of payment scheme. Second, performance in the imposed tournament round may affect one's selection of payment scheme in SS2 for reasons other than as a proxy for task ability since the imposed tournament is part of the experimental session and occurs directly prior to the SS2 choice.

In most cases, our hypotheses are unidirectional as indicated in the discussion and hypotheses that conclude Section 3. In those cases, we use one-tailed hypothesis tests and report one-tailed *p*-values. All such tests are indicated by a 1 superscript.[11] In H1, we predicted that males would be more competitive than females under gender/family priming. This is corroborated by significant coefficients for the male dummy variable in both Models 1 and 2 (p=0.005 and 0.035 respectively). For ease of interpretation, we also report marginal effects. On top is the marginal effect for the gender/family treatment, highlighted by a superscript G. For binary categorical variables, the marginal effect is just the difference between the probability of entering the tournament when the dummy variable equals 1, indicating a male, and the probability of entering when the dummy variable equals 0, indicating a female. For example, in Model 1 the number 0.30 indicates that the probability of a male entering the tournament exceeds the probability of a female entering the tournament by 0.30 (0.37 – 0.07). The *p*-value indicates that this difference is significant (p=0.001), again supporting H1. Below is the analogous number for the professional priming treatment, highlighted by a superscript P. In this case, we use a two-tailed test because H2 predicted no difference between males and females in this case. All such

[10] The results using performance in the imposed tournament as a proxy for ability are available from the authors upon request.

[11] There is considerable controversy about the appropriate use of one-tailed tests. We use one-tailed tests only for our explicitly unidirectional hypotheses. A reader who is skeptical about the use of one-tailed tests even under such circumstances may reinterpret the significance of our one-tailed results by simply doubling the relevant *p*-values, which are highlighted by a 1 superscript in the tables.

two-sided tests are indicated by a 2 superscript. The marginal effect is 0 since the probability of entry is 0.25 for both males and females, supporting H2. After controlling for ability by use of GMAT scores in Model 2, a significant difference in marginal effect between males and females in the gender/family priming treatment remains (p=0.020), while the difference in the professional priming treatment continues to be insignificant. Marginal effects are calculated for the average GMAT score, which was 660.

Insert Table 4 about here.

H3 predicted that females would be significantly more competitive under professional priming than under gender/family priming. It is corroborated by the significant coefficients and marginal effects for females in both Models 1 and 2 (p=0.031 and 0.048 respectively for the two coefficients and p=0.016 and 0.029 respectively for the two marginal effects). The female marginal effects are on top and highlighted by an F superscript. We made no directional prediction for the effect of priming on males. The two-tailed hypothesis test indicates that the marginal effect of priming for males, presented below the female marginal effect and highlighted by an M superscript, was not significant in either model.

H4 predicts that the marginal effect of the interaction between gender and priming would be significantly negative. The significantly negative coefficients indicate that the negative interaction effect significantly improves the goodness of fit of both Models 1 and 2 (p=0.017 and 0.037 respectively). The marginal effect is a test of whether the difference between the priming effect for males and the priming effect for females (or equivalently the difference between males and females in the priming treatment minus the difference between them in the gender/family treatment) is significantly negative as predicted. In Model 1, this number is –0.30 (either 0 – 0.30 or equivalently –0.12 – 0.18). It is significant as is the comparable number for Model 2 (p=0.017 and 0.038 respectively), which is evaluated at the average GMAT score of 660, corroborating the H4 prediction that gender would moderate the priming effect.[12] The marginal effect of GMAT score is marginally significant using a one-tailed test (p=0.070). The marginal effect for GMAT score is calculated at the average GMAT score using a weighted average of the marginal effects evaluated for males and females in each treatment. When added to the logit regression, none of the demographic variables (i.e., marital status, managerial experience, target salary, age, or

[12] Marginal effects for interactions in non-linear models must be calculated and interpreted with great care. See Ai and Norton (2003), Ai, Wang and Norton (2004) and Karaca-Mandic, Norton and Dowd (2011) for a clear and insightful discussion of this issue.

having children) presented in Table 2 other than gender and GMAT score was significantly related to the selection of the competitive compensation scheme.

During rounds 2 and 3, all participants experienced both the piece-rate and tournament compensation schemes. In rounds 1, 2, and 3, each participant received feedback on the number of arithmetic questions s/he solved, but not on her/his relative ranking. We conjectured that such experience might weaken the effects of identity priming. However, it did not. Table 5 reports the logit results for the second self-selection in round 4 (SS2). Models 1 and 2 are specified exactly as for SS1 in Table 4, and the interpretation of the coefficients and marginal effects is the same. The Model 1 SS2 results are qualitatively similar to the results for SS1 with one interesting exception. For SS2, the marginal effect of professional priming for males is negative and marginally significant (p=0.063). Thus, there is some suggestive evidence that gender/family priming representing male identity in the family has a greater effect on the competitiveness of males than professional priming. This is consistent with the literature on the fatherhood wage premium (e.g. Glauber, 2008; Hodges and Budig, 2010; Lundberg and Rose, 2000, 2002) as discussed above.

Insert Table 5 about here.

When GMAT score is added to the model, its coefficient and marginal effect are now both unambiguously significant (p=0.010 and 0.006 respectively) and it has double the marginal impact relative to its impact on SS1, implying a greater influence of ability on sorting by experienced participants. The marginal effect of the male dummy in the gender/family treatment is now only marginally significant (p=0.098), giving weak support to H1. However, the marginal effect of male in the professional priming treatment is now significant and negative using a two-tailed test (p=0.035), rejecting H2 in an interesting direction. After some experience, women primed to activate their professional identity actually exhibit a significantly higher probability of choosing the competitive tournament than do similarly primed men, controlling for ability using GMAT scores. Thus, it is the males, who compared to females with the same GMAT scores, shy away from competition. As with SS1, the marginal effect of priming on females remains significant (p=0.020), again supporting H3. The priming effect on males is no longer significant when we control for GMAT score. However, the marginal effect of the interaction continues to be significant (p=0.006), again supporting H4. As for SS1, none of the demographic variables other than gender and GMAT score affected the selection of payment scheme.

5.3 Mediated Moderation Analysis

Prior to the SS2 decision in round 4, each participant was exposed to an imposed tournament. As described in the methods section, we gathered data on each participant's belief regarding her/his ranking in that tournament relative to her/his designated competitors. These beliefs were informed by feedback on one's own actual number of questions solved correctly in the imposed tournament. However, the performance levels of one's competitors were not revealed prior to the belief solicitation. Of 47 people who believed they ranked first in the imposed tournament, 24 chose the tournament in SS2, while of 85 who believed their rank was second, third, or fourth, only 7 chose the tournament. All of those 7 believed they ranked second. This suggests that beliefs about one's previous performance in the imposed tournament influenced the SS2 choice. H5 predicts that such beliefs may mediate the moderated effect of priming on SS2.[13] We focus on the distinction between those who believed they ranked first in the imposed tournament and those who believed they did not rank first. Thus, our belief variable is a binary categorical variable.[14]

We examine this possibility following the procedures outlined in Baron and Kenny (1986). We have already established that priming moderated by gender affects self-selection into a competitive tournament. This is Baron and Kenny's (1986) step one. We next examine whether priming moderated by gender affects the proposed mediator, beliefs about one's performance in the imposed tournament. The results are presented in Table 6. Focusing on Model 2, which controls for GMAT score, the marginal effect of gender is significant in the gender/family priming treatment (p=0.005), but not in the professional treatment, indicating that males were significantly more likely than females to believe they finished first, but only under gender/family priming. Moreover, exposure to professional as opposed to gender/family priming increases significantly the probability that women believe they finished first in the imposed tournament (p=0.039), but does not significantly affect men. The marginal effect of the interaction, evaluated at the average GMAT score, is negative but with only marginal significance (p=0.082). This is the first part of Baron and Kenny's (1986) step two.

Insert Table 6 about here.

[13] Note that in contrast to SS2, SS1 occurs prior to the imposed tournament. Thus, beliefs about one's performance in the imposed tournament cannot mediate one's SS1 choice.

[14] As a robustness check, we also did the analysis using beliefs defined as a four-level categorical variable. The results were qualitatively similar, though there was some loss of statistical power because of fewer degrees of freedom.

The second part of step two involves adding the mediator to the SS2 estimation. The results are reported in Model 3 in Table 5. The coefficient of the proposed mediator, beliefs, and its marginal effect are both significant (p=0.000 for both). All of the other coefficients are lower in absolute value than in Model 2, though the effect on the interaction coefficient is rather small. However, the marginal effects of gender, reported both for those who believed they ranked first and for those who did not, are still significant for the professional priming treatment (p=0.038 and 0.002, respectively). Thus, even when we control for beliefs, males continue to choose the tournament significantly less often than females under professional priming. The marginal effect of professional priming on females becomes only marginally significant when controlling for beliefs (p=0.102 and 0.095 for those believing they ranked first and for those who did not respectively), while the interaction term (p=0.023*)* and its marginal effects remain significant (p=0.021 and 0.046 for those believing they ranked first and for those who did not respectively). This suggests that beliefs about one's ranking in the imposed tournament only partially mediate the moderated effect of priming on SS2, partially corroborating H5.

Step three involves adding interactions between priming and beliefs as well as gender and beliefs to the model to see whether the mediator is itself moderated by either the treatment variable or the moderator. None of these interactions is significant.[15] Thus, the moderated effect of identity priming on preference for competition seems to work both indirectly through its effect on how optimistic one feels about one's ranking in a previous tournament as well as directly on the selection decision itself.

5.4 Gender, Priming, Risk Attitude and Near Tournaments

Initially, we planned to consider risk attitude as an additional potential mediator. The idea was that in addition to affecting beliefs about one's ranking in a tournament, priming might have analogous effects on risk attitude moderated by gender. This in turn might provide an additional indirect pathway affecting the decision to select into a competitive tournament since the competitive tournament is also financially riskier than piece-rate compensation. The risk characteristics of a tournament were isolated from performance ranking by giving participants the choice of either chance pay or a piece rate in round 5 (SSC). Those selecting chance pay revealed themselves to be risk-loving or risk-neutral, while those selecting into the piece rate revealed themselves to be risk-averse or risk-neutral.

[15] These results are omitted to save space. However, they are available from the authors upon request.

It was not possible to estimate a logit model using selection into chance pay as the dependent variable because no females selected chance pay under gender/family priming. This leads to the statistical problem of quasi-complete separation, which implies that maximum likelihood estimates of the coefficients of the logit model do not exist (Albert and Anderson, 1984). As suggested by Heinze and Schemper (2002), we instead use the penalized logistic regression procedure originally developed by Firth (1993).[16] Heinze and Schemper (2002) also show that in cases of separation such as occur in our data, the penalized likelihood function is highly asymmetric, making Wald tests and confidence intervals unsuitable. Thus, following Heinze and Schemper (2002), we employ two-tailed likelihood ratio tests.

The results are reported in Table 7. GMAT is not significant in Model 2. Therefore, we focus on Model 1, which excludes GMAT score. In that model, the main effect of gender is not significant either under gender/family or professional priming. Professional priming has a significantly positive effect on the odds of females selecting chance pay (p=0.047), but no significant effect on males. The interaction is significant (p=0.036), indicating that the effect of priming on the odds of selecting chance pay is moderated by gender.

Insert Table 7 about here.

However, when SSC is added to the SS2 logit regression as an independent variable along with beliefs about one's ranking in a previously played tournament, it is not significant.[17] Thus, it cannot be considered as an additional mediating variable in the relationship between priming moderated by gender and selection into a tournament. This result prompted us to examine the relationship between SSC and ranking beliefs despite there being no obvious reason that a person who believes he has performed relatively better than others in a tournament should exhibit a higher probability of taking a risky gamble. We found that all eight participants who selected chance pay were also among the 39 out of 132 who believed they had finished first in the imposed tournament. Thus, it appears that for some participants the same forces that drove them to believe they ranked first in the imposed tournament also gave them confidence that luck would go their way in a completely random game of chance. As indicated by the results in Table 7, these forces encompass identity priming moderated by gender. Thus, while risk attitude does not appear to represent a mediating variable in the relationship between moderated priming and

[16]We implemented this procedure using Firthlogit, a module developed for use with Stata by Coveney (2008).
[17] The results are not reported here to save space, but are available from the authors upon request.

selection into a tournament, it seems to be part of the same identity package and thus influenced by the same factors.

NV examined not only the effect of gender on selection into a competitive tournament, but also whether it would affect a choice between submitting a previous piece-rate performance to a piece-rate or tournament payment scheme. The idea was to present their participants with the possibility of choosing a tournament payment scheme without subsequently having the opportunity actually to compete in a tournament.[18] As they pointed out, such a choice would involve many of the same factors that might affect choice into a tournament such as risk attitude, confidence and attitude towards receiving feedback on one's rank. However, it would not involve the thrill or discomfort, as the case may be, of actually competing. We also consider such a choice to determine whether the selection of such a near tournament (PSS) is also affected by moderated identity priming mediated by beliefs. Finally, we also gave participants the choice to submit their imposed tournament performance to either a piece-rate or a tournament scheme (TSS). This is also a near tournament with similar properties to the earlier choice. However, the earlier choice was based on an imposed piece-rate performance for which participants had little financial reason to focus on ranking first. In this case, there was such a motivation. Analysis of selection into these two types of near tournaments[19] reveals that, 1) for a near tournament that involved a previous piece-rate performance (PSS), the moderated identity priming effect is present but attenuated relative to that on selection into a real tournament, while beliefs about one's ranking in the imposed piece rate do not mediate moderated priming; however 2) for a near tournament that involved a previous tournament performance (TSS), the results are similar to those for an actual tournament choice as in SS2. Taken together, the near tournament results are in line with actual tournament results as long as the prior performance for which a pay scheme is being selected was actually played as a competitive tournament.

6. DISCUSSION AND CONCLUSIONS

In this paper, we focus on a very special population, namely people who have successfully gained admission and are currently participating in a highly selective and competitive MBA program. We chose to examine this population because we are interested in studying a conflict of professional and gender/family identities that may coexist within the minds of many highly

[18] As in our design, participants were paid for one round selected at random at the end of the experiment.

[19] These results are omitted to save space. However, they are available from the authors upon request.

competitive female professionals, and in comparing its behavioral impact with that of the reinforcing identities that drive many competitive male professionals. We show that for such women identity priming significantly affects willingness to participate in competitive tournaments, to take risky gambles and to select into a tournament pay scheme based on an earlier imposed tournament performance. A similar but far weaker effect occurs when participants decide whether to submit their former piece-rate performance to a piece-rate or tournament compensation scheme. Such priming has significantly different effects on males from the same population. This contrast highlights an identity conflict for the females in our study that was absent for the males. Within this specific population, one particularly surprising result emerged. Initially, for SS1, females under gender/family priming were less likely than males to select into a tournament, whether or not we controlled for ability using GMAT score as a proxy, while under professional priming there was no such difference between males and females. After gaining experience with both a piece rate and a tournament however, behavior changed. For SS2, the higher probability of a male selecting into a competitive tournament under gender/family priming vanished with the GMAT score control. Moreover, under professional priming females exhibited a significantly higher likelihood than males of selecting into a competitive tournament. Within this select population of ambitious future managers, a male was more likely to shy away from competition than was his female counterpart with an identical GMAT score under professional priming.

The effect of identity priming, moderated by gender, on the second selection into a competitive tournament (SS2) worked via two pathways. The first was through its effect on beliefs about one's ranking under the previously played imposed tournament. The second was a direct effect on SS2, controlling for such beliefs. The same can be said for the gender-moderated effect of priming on the decision to submit a previously played tournament performance to a tournament rather than a piece-rate pay scheme.

6.1 Theoretical Contributions

The gender-moderated effect of identity priming on preference for competition demonstrated in this experiment is important for two reasons. First, following Benjamin, Choi, and Strickland (2010), it is an indicator of the marginal impact of two conflicting identities that may have an important influence on the extent to which female professionals choose to compete. Whereas for such women, gender/family and professional identities may often be at cross-

purposes, for male professionals this is rarely the case. It thus links identity theory with the observation that women often choose to compete less than men. Second, outside the lab managerial professionals are frequently exposed to priming through life's important events. These can activate and thus strengthen the impact of gender/family and/or professional identities on behavior. Marriage, pregnancy and parenthood may all bring out gender/family identity. Whatever professional priming is received in the workplace, the cry of one's small child is likely to have a strong offsetting impact for many female professionals. The effect on many male professionals might be equally strong, but not necessarily at odds with their professional identity.

This study also contributes to the literature on the motherhood and gender wage gaps. In particular, it suggests that while employer discrimination against mothers or in favor of males or fathers may exist, many mothers may find themselves tugged by their identity as women/mothers away from full and committed participation in the competitive environment of the corporate world, while many males/fathers may not face this conflict. While the focus of this study is the impact of conflicting identities on female professionals, it also suggests that the impact of gender/family identity may be even stronger for women who have chosen not to pursue managerial or professional careers. Thus, the motherhood and gender wage gaps may in part be explained by such choices. The study thus sheds light on how social norms reflected in identities may explain previous findings about gender differences in preference towards competition (e.g., Niederle and Vesterlund, 2007; Gneezy, et al., 2009; Datta Gupta, et al., 2011).

Finally, this study has a peripheral relationship to the vast literature concerning the effect of stereotypes on behavior (e.g. Steele and Aronson, 1995, Kray, Galinsky and Thompson, 2002). Stereotype threat theory and its corroborating empirical studies demonstrate the impact of negative stereotypes on the performance of a task (e.g. Steele and Aronson, 1995; Stone et al., 1999). In our study, stereotypes play a different role. First, they are neither objectively negative nor objectively positive, but rather embody ideals or norms associated with different gender/family or professional identities. Second, priming those identities, while evoking the related ideals, does not affect performance on the arithmetic task employed in the study. Rather, it affected the competitiveness attached to the payment scheme chosen by the subjects. Whereas the mechanisms proposed for the impact of stereotype threat on performance are akin to those involved in choking under stress (e.g. Steele, 1997; Steele et al., 2002), the behavioral response of our subjects to identity priming appears to work both indirectly through affecting beliefs

regarding relative ability and directly though altering preference for competition. Thus, we show that identity priming may have powerful effects not only by positively or negatively affecting task performance through invoking identity-based stereotypes as in Shih, Pittinsky, and Ambady (1999), but also by affecting preferences and choices regarding whether or not one wants to perform in competition with others.

6.2 Implications for Managerial Practice, Policy Making and Future Research

Our study begins to answer a critical question: is it possible to alter how women perceive and experience competition, thereby altering their behavioral choices? We show that it is possible in the lab. Does this imply that priming techniques could be used to "socially engineer" preferences for competition in everyday life? Might the use of priming to activate professional identities in the workplace help reduce the motherhood wage penalty and the gender wage gap? Would this be beneficial for women? Whether this is possible in the real world is an open question that requires further study. Whether it is desirable is an even more challenging question that requires study from a variety of methodological perspectives. This study emphasizes the importance of identity by manipulating it in the laboratory through priming. However, the fact that it is important does not necessarily imply that it *should* be manipulated. For example, any policy meant to manipulate the salience of professional identity versus gender/family identity in the real world must take into account not only its effect on men and women at work, but also its effect on men, women and children within the family. Moreover, any proposal for one group of people to use priming techniques to manipulate the identity of others, no matter how well-intentioned, must confront difficult ethical issues of power and control that extend well beyond the scope of this study.

References

Afridi, F., Li, S. X., & Ren, Y. (2011). Social identity and inequality: The impact of China's *Hukou* system. Working Paper.

Ai, C., & Norton, E. C. (2003). Interaction terms in logit and probit models. *Economic Letters*, 80: 123–129.

Ai, C., Wang, H., & Norton, E.C. (2004). Computing interaction effects in logit and probit models. *Stata Journal*, 4: 103–116.

Akerlof, G. A., & Kranton, R. E. (2000). Economics and identity. *Quarterly Journal of Economics*, 115: 715–53.

Akerlof, G. A., & Kranton, R. E. (2002). Identity and schooling: Some lessons for the economics of education. *Journal of Economic Literature*, 40: 1167–1201.

Akerlof, G. A., & Kranton, R. E. (2005). Identity and the economics of organizations. *Journal of Economic Perspectives*, 19: 9–32.
Akerlof, G. A., & Kranton, R. E. (2008). Identity, supervision and work groups. *American Economic Review*, 98: 212–17.
Albert, A., & Anderson, J. A. (1984). On the existence of maximum likelihood estimates in logistic regression models. *Biometrika*, 71: 1-10.
Andersen, S., Ertac, S., Gneezy, U., List, J., & Maximiano, S. (2011). Gender, Competitiveness and Socialization at a Young Age: Evidence from a Matrilineal and a Patriarchal Society. Working paper.
Anderson, D. J., Binder, M., & Krause, K. (2002). The motherhood wage penalty: Which mothers pay it and why? *American Economic Review, Papers and Proceedings*, 92: 354–358.
Anderson, D. J., Binder, M. & Krause, K. (2003). The motherhood wage penalty revisited: Experience, heterogeneity, work effort, and work-schedule flexibility. *Industrial and Labor Relations Review*, 56: 273–294.
Babcock, L., & Laschever, S. (2003). *Women Don't Ask: Negotiation and the Gender Divide*. Princeton, UK: Princeton University Press.
Balafoutas, L., Kerschbamer, R., & Sutter, M. (2012). Distributional preferences and competitive behavior. *Journal of Economic Behavior and Organization*, in press.
Balafoutas, L., & Sutter, M., (2010). Gender, Competition and the Efficiency of Policy Interventions. IZA DP No. 4955
Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51: 1173–1182.
Basu, K. (2005). Racial, conflict, and the malignancy of identity. *Journal of Economic Inequality*, 3: 221–241.
Basu, K. (2010). The moral basis of prosperity and oppression: Altruism, other regarding behaviour and identity. *Economic Philosophy*, 26: 189–216.
Bénabou, R., & Tirole, J. (2011). Identity, morals and taboos: Beliefs as assets. *Quarterly Journal of Economics*, 126: 805–855.
Benard, S., Paik, I., & Correll, S. J. (2008). Cognitive bias and the motherhood penalty. *Hastings Law Journal*, 59: 1359–1387.
Benjamin, D. J., Choi, J. J., & Strickland, A. J. (2010). Social identity and preferences. *American Economic Review*, 100: 1913–1928.
Benjamin, D. J., Choi, J. J., & Fisher, G.W. (2010). Religious identity and economic behavior. NBER Working Paper No. 15925.
Bertrand, M., & Hallock, K. F. (2001). The Gender gap in top corporate jobs. *Industrial and Labor Relations Review*, 55: 3–21.
Bertrand, M., Goldin, C., & Katz, L. F. (2010). Dynamics of the gender gap for young professionals in the financial and corporate sectors. *American Economic Journal: Applied Economics*, 2: 228–255.
Black, S.E., & Strahan, P.E. (2002). Entrepreneurship and bank credit availability. *Journal of Finance*, 57: 2807–2833.
Blair-Loy, M. (2003). *Competing Devotions: Career and Family among Women Executives*. Cambridge, MA: Harvard University Press.
Blau, D.F., & Kahn, L. M. (2000). Gender differences in pay. *Journal of Economic Perspectives*, 14: 75–99.

Blau, D.F., & Kahn, L. M. (2006). The U.S. gender pay gap in the 1990s: Slowing convergence. *Industrial and Labor Relations Review*, 60: 45–66.
Blau, D.F., & Kahn, L. M. (2007). Changes in the labor supply behavior of married women: 1980–2000. *Journal of Labor Economics*, 25: 393–438.
Budig, M. J. (2010). The motherhood wage and management gap: The policies that work. Testimony Budig presented to the U.S. Congressional Joint Economic Committee Hearing on September 28, 2010. http://womenmakenews.com/content/story/motherhood-wage-and-management-gap-policies-work.
Budig, M. J., & England, P. (2001). The wage penalty for motherhood. *American Sociological Review*, 66: 204–225.
Burke, P. (1980). The self: Measurement requirements from an interactionist perspective. *Social Psychology Quarterly*, 43:18-29.
Cadsby, B., Song, F., & Tapon, F. (2007). Sorting and incentive effects of pay for performance: An experimental investigation. *Academy of Management Journal*, 50: 387–405.
Caranci, B., & Gauthier, P. (2010). Career interrupted: The economic impact of motherhood. *TD Economics report: Career Interrupted - The Economic Impact of Motherhood*. http://www.td.com/economics/special/bc1010_career_interrupted.pdf.
Carter, N. M., & Silva, C. (2010). Women in management: Delusions of progress. *Harvard Business Review*, 88: 19–21.
Cohen, J., Cohen, P., Aiken, L., & West, S. H. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, N.J: L. Erlbaum Associates.
Chen, R.W., & Chen, Y. (2011). The potential of social identity for equilibrium selection. *American Economic Review*, forthcoming.
Chen, Y., & Li, S. X. (2009). Group identity and social preferences. *American Economic Review*, 99: 431–457.
Chen, Y., Li, S. X., Liu, T. X., & Shih, M. (2010). Which hat to wear? Impact of natural identities on coordination and cooperation. Working Paper.
Correll, S.J., Benard, S. S., & Paik, I. (2007). Getting a job: Is there a motherhood penalty? *American Journal of Sociology*, 112: 1297–1338.
Cuddy, A. J. C., Fiske, S.T., Glick, P. (2004). When professionals become mothers, warmth doesn't cut the ice. *Journal of Social Issues*, 60: 701–718.
Dargnies, M. (2009). Does team competition eliminate the gender gap in entry in competitive environments? Centre d' Economie de la Sorbonne Working Paper 2009-06.
Datta Gupta, N., Poulsen, A., & Villeva, M. C. (2011). Gender matching and competitiveness: Experimental evidence. *Economic Inquiry*, forthcoming.
Devos, T., Blanco, K., Rico, F., & Dunn, R. (2008). The role of parenthood and college education in the self-concept of college students: Explicit and implicit assessments of gendered aspirations. *Sex Roles*, 59: 214–228.
Drolet, M. (2001). The male-female wage gap. *Perspectives on Labour and Income*, 2: no. 12.
Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review*, 109: 573–598.
Edwards, M. E. (2005). Occupational structure and the employment of American mothers of young children. *Journal of Family and Economic Issues*, 26: 31–53.
Else-Quest, N., Hyde, J., & Linn, M. (2010**).** Cross-national patterns of gender differences in mathematics: A meta-analysis. *Psychological Bulletin*, 2010; 136 (1): 103-127.
Ertac, S., & Szentes, B. (2011). The effect of information on gender differences in competitiveness: Experimental evidence. Working paper.

Flory, J. A., Leibbrandt, A., & List, J. (2010). Do competitive workplaces deter female workers? A large-scale natural field experiment on gender differences in job-entry decisions. Working paper.
Gill, D., & Prowse, V. (2011). Gender differences and dynamics in competition: The role of luck. Working paper.
Glauber, R. (2008). Gender and race in families and at work: The fatherhood wage premium. *Gender & Society*, 22: 8–30.
Glass, J. (2004). Blessing or curse? Work-family policies and mother's wage growth over time. *Work and Occupations*, 31: 367–394.
Gneezy, U., & Rustichini, A. (2004). Gender and competition at a young age. *American Economic Review*, 94: 377–381.
Gneezy, U., & Rustichini, A. (2006). Executive versus teachers: Gender, competition and self-selection. Working Paper.
Gneezy, U., Niederle, M., & Rustichini, A. (2003). Performance in Competitive Environments: Gender Differences. *Quarterly Journal of Economics*, 118: 1049–74.
Gneezy, U., Leonard, K. L., & List, J. A. (2009). Gender differences in competition: Evidence from a matrilineal and a patriarchal society. *Econometrica*, 77: 1637–1664.
Goldin, C., & Rouse, C. (2010). Orchestrating impartiality: the impact of 'blind' auditions on female musicians. *American Economic Review*, 90: 715–741.
Guenther, C., Ekinci, N., Schwieren, C., & Strobel, M. (2010). Women can't jump? An experiment on competitive attitudes and stereotype threat. *Journal of Economic Behavior and Organization*, 75: 395–401.
Harrison, G. & List, J. (2004). Field experiments. *Journal of Economic Literature* 42, 1009–1055.
Harkness, S., & Waldfogel, J. (2003). The family gap in pay: evidence from seven industrialized countries. *Research in Labor Economics*, 22: 369–414.
Healy, A., & Pate, J. (2012). Can teams help to close the gender competition gap? *The Economic Journal*, forthcoming.
Heinze, G., & Schemper, M. (2002). A solution for the problem of separation in logistic regression. *Statistics in Medicine*, 21: 2409-2419.
Hodges, M. J., & Budig, M. J. (2010). Differences in disadvantage: Variation in the motherhood penalty across white women's earnings distribution. *American Sociological Review*, 75: 705–728.
Hyde, J., Fennema, E., & Lamon, S. (1990). Gender differences in mathematics performance: A meta-analysis. *Psychological Bulletin*, 107: 139-155.
Joshi, H., Paci, P., & Waldfogel, J. (1999). The wages of motherhood: Better or worse? *Cambridge Journal of Economics*, 23: 543–564.
Kawakami, K., Young, H., & Dovidio, J. F. (2002). Automatic stereotyping: Category, trait, and behavioral activations. *Personality and Social Psychology Bulletin*, 28: 3–15.
Karaca-Mandic, P., Norton, E. P., & Dowd, B. (2011). Interaction terms in non-linear models. *Health Services Research*, forthcoming.
Kray, L. J., Thompson, L, & Galinsky, A. (2001). Battle of the sexes: Gender stereotype confirmation and reactance in negotiations. *Journal of Personality and Social Psychology*, 80: 942-958.
Kunze, A., & Ejrnaes, M. (2004). Wage dips and drops around first births. IZA Discussion Paper No. 1011.
Lundberg, S., & Rose, E. (2000). Parenthood and the earnings of married men and women. *Labor Economics*, 7: 689–710.
Lundberg, S., & Rose, E. (2002). The effects of sons and daughters on men's labor supply and wages. *The Review of Economics and Statistics*, 84: 251–268.

MacKinnon, D. P. (2008). *Introduction to Statistical Mediation Analysis*. New York: Erlbaum.
Molina, J. A., & Montuenga, V. M. (2008). The motherhood wage penalty in a mediterranean country: the case of Spain. IZA Discussion Paper No. 3574.
Müller, J. & Schwieren, C. (2011). Can personality explain what is underlying women's unwillingness to compete? Working Papers 0511, University of Heidelberg, Department of Economics.
Niederle, M., & Vesterlund, L. (2007). Do women shy away from competition? Do men compete too much? *The Quarterly Journal of Economics*, 122: 1067–1101.
Niederle, M., Segal, C., & Vesterlund, L. (2008). How costly is diversity? Affirmative action in light of gender differences in competitiveness. NBER Working Paper No 13923.
Pfeffer, J. (2010). Power: Why Some People Have it and Others Don't. *Harper Business*.
Phipps, S., Burton, P., & Latheridge, L. (2001). In and out of the labour market: Long-term income consequences of child-related interruptions to women's paid work. *Canadian Journal of Economics*, 34: 411–429.
Price, C. R. (2011). Do women shy away from competition? Do men compete too much?: A failed) replication. Working paper.
Price, C. R. (2012). Gender, competition, and managerial decisions. *Management Science,* in press.
Polachek, S.W. (1981). Occupational self-selection: A human capital approach to sex differences in occupational structure. *The Review of Economics and Statistics*, 63: 60–69.
Shih, M., Pittinsky, T.L., & Ambady, N. (1999). Identity adaptiveness: Affect across multiple identities. *Journal of Social Issues*, 55: 503–518.
Sigle-Rushton, W., & Waldfogel, J. (2007a). Motherhood and women's earnings in Anglo-American, continental European, and Nordic countries. *Feminist Economics*, 13 2): 55–91.
Sigle-Rushton, W., & Waldfogel, J. (2007b). The incomes of families with children: A cross-national comparison. *Journal of European Social Policy*, 17: 299–318.
Steele, C.M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, 52: 613–629.
Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African-Americans. *Journal of Personality and Social Psychology*, 62: 26-37.
Steele, C. M.; Spencer, S. J.; Aronson, J. (2002). Contending with group image: The psychology of stereotype and social identity threat. *Advances in Experimental Social Psychology*, 34: 379-440.
Stone, J., Lynch, C. I., Sjomeling, M., Darley, J. M. (1999). Stereotype threat effects on Black and White athletic performance. *Journal of Personality and Social Psychology*, 77: 1213–1227.
Stryker, S. (1968). Identity salience and role performance: The importance of symbolic interaction theory for family research. Journal of Marriage and the Family, 30: 558-564.
Stryker, S. (1987). Identity theory: Developments and extensions. In *Self and Identity*, K. Yarley and T. Honess (Eds)., pp 89-104. New York: Wiley.
Stryker, S. & Serpe, R. T. (1982). Commitment, identity salience, and role behavior. In *Personality, Roles and Social Behavior*, W. Ickes and E. S. Knowles (Eds.), pp199-218. New York: Springer-Verlag.
Sutter, M., & Rutzler, D. (2010). Gender differences in competition emerge early in life. University of Innsbruck Working Paper.
Todd, E. (2001). Educational attainment and family gaps in women's wages: Evidence from five industrialized countries. Luxembourg Income Study (WP 245). Syracuse, NY: University of Syracuse.
Vandegrift, D., & Yavas, A. (2009). Men, women, and competition: An experimental test of behavior. *Journal of Economic Behavior and Organization*, 72: 554–570.

Waldfogel, J. (1997). The effect of children on women's wages. *American Sociological Review*, 62: 209–217.
Waldfogel, J. (1998a). Understanding the 'family gap' in pay for women with children. *Journal of Economics Perspectives*, 12: 137–156.
Waldfogel, J. (1998b). The family gap for young women in the United States and Britain: Can maternity leave make a difference? *Journal of Labor Economics*, 16: 505–545.
Weichselbaumer, D., & Winter-Ebmer, R. (2005). A meta-analysis of the international gender wage gap. *Journal of Economic Surveys*, 19: 479–511.
Wenner as, C., & Wold, A. (1997). Nepotism and sexism in peer-review. *Nature*, 387: 341–343.
Wozniak, D., Harbaugh, W.T., & Mayr, U. (2010). The menstrual cycle and performance feedback alter gender differences in competitive choices. University of Oregon Economics Department Working Paper.
Zhong, C. B. (2011). The ethical dangers of deliberate decision making. *Administrative Science Quarterly*, 56: 1-25.

Figure 1 Proportion of Men and Women Self-Selecting into Tournament Pay in SS1 and SS2

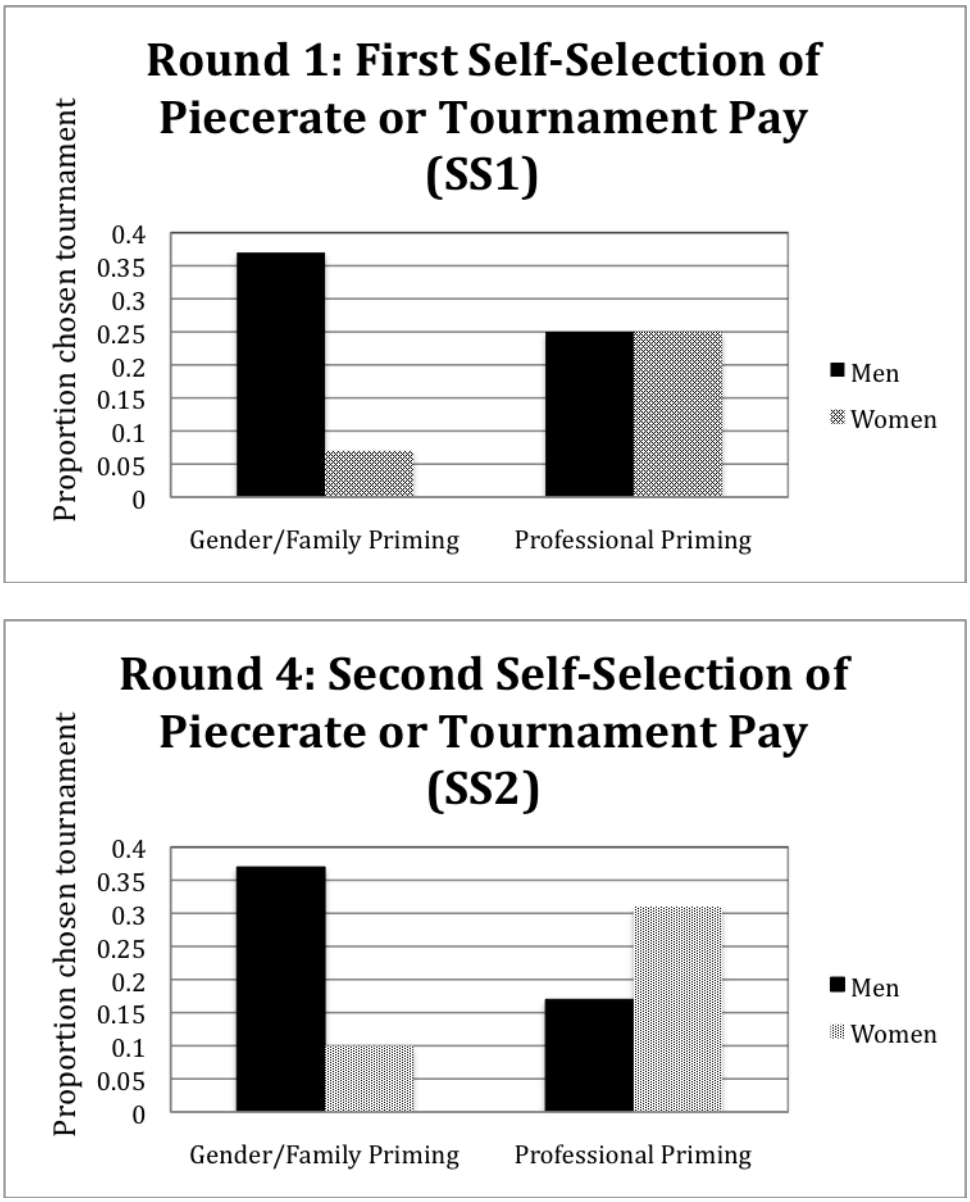

Table 1. Data Overview

	Gender/Family Priming Treatment		Professional Priming Treatment	
	Men (n=30)	Women (n=30)	Men (n=36)	Women (n=36)
Round 1: Self-Selection 1 of Tournament Pay (SS1)	0.37	0.07	0.25	0.25
Round 1 Performance	16.40	12.23	15.14	13.56
Imposed Piece-rate Round Performance	16.07	13.33	15.53	13.83
Imposed Tournament Round Performance	15.83	12.40	15.47	13.35
Round 4: Self-Selection 2 of Tournament Pay (SS2)	0.37	0.10	0.17	0.31
Round 4 Performance	16.33	13.20	15.58	13.75
Round 5: Self-Selection of Chance Pay (SSC)	0.13	0.00	0.03	0.09
Round 7: Self-Selection of Tournament Pay for Piece-rate Round (PSS)	0.43	0.20	0.28	0.39
Round 6: Self-Selection of Tournament Pay for Tournament Round (TSS)	0.37	0.10	0.25	0.31

Table 2. Means, Standard Deviations and Correlations

Variable	Mean	Std. Dev.	1.	2.	3.	4.	5.	6.
1.Male	0.50	0.047						
2.Married	0.22	0.039	0.114					
3.Have Children	0.05	0.021	0.146*	0.441***				
4.GMAT Score	660	51.21	0.313***	0.107	-0.005			
5.Managerial Experience	4.71	0.213	0.173**	0.344***	0.324	0.067		
6.Target Salary	90820	1710	0.365***	0.119	0.149*	0.266**	0.266**	
7.Age	27.56	2.91	0.173**	0.442***	0.442***	-.080	0.763***	0.205**

Note: n=132. *, ** and *** denote $p < 0.05, 0.01, 0.001$ respectively.

Table 3. Determinants of Imposed Piece-rate/Tournament Rounds Performance

(OLS regressions with two-tailed *p*-values in parentheses)

	Imposed Tournament Round		Imposed Piece-Rate Round	
	Model 1 (n=132)	Model 2 (n=116)	Model 1 (n=132)	Model 2 (n=116)
Gender (Male=1)	3.43	1.63	2.733	0.780
	(0.013)	(0.278)	(0.051)	(0.613)
Priming (Professional Priming=1)	0.961	-0.500	0.500	-0.850
	(0.463)	(0.728)	(0.707)	(0.566)
Interaction	-1.32	0.526	-1.04	0.632
	(0.475)	(0.786)	(0.581)	(0.752)
GMAT		0.023		0.023
		(0.015)		(0.021)
Constant	12.4	-1.70	13.33	-0.307
	(0.000)	(0.786)	(0.000)	(0.962)

Table 4. Determinants of SS1 (Logit regressions with *p*-values in parentheses)

	Model 1 (n=132)		Model 2 (n=116)	
	Coef (*p*-value)	Marginal (*p*-value)	Coef (*p*-value)	Marginal (*p*-value)
Gender (Male=1)	2.09	0.30^{G}	1.54	0.23^{G}
	$(0.005)^{1}$	$(0.001)^{1}$	$(0.035)^{1}$	$(0.020)^{1}$
		0.000^{P}		-0.05^{P}
		$(1.000)^{2}$		$(0.651)^{2}$
Priming (Professional Priming=1)	1.54	0.18^{F}	1.43	0.20^{F}
	$(0.031)^{1}$	$(0.016)^{1}$	$(0.048)^{1}$	$(0.029)^{1}$
		-0.12^{M}		-0.08^{M}
		$(0.305)^{2}$		$(0.494)^{2}$
Interaction	-2.09	-0.30	-1.81	-0.28
	$(0.017)^{1}$	$(0.017)^{1}$	$(0.037)^{1}$	$(0.038)^{1}$
GMAT			0.007	0.001
			$(0.075)^{1}$	$(0.070)^{1}$
Constant	-2.64		-6.76	
	$(0.000)^{2}$		$(0.034)^{2}$	

Note: [1] and [2] denote one-tailed and two-tailed *p*-values respectively. ^{G}, ^{P}, ^{M} and ^{F} denote marginal effects estimated at the average GMAT level for the gender/family-priming treatment, professional-priming treatment, males and females respectively. The marginal effect for GMAT score is calculated at the average GMAT score using a weighted average of the marginal effects evaluated for males and females in each treatment.

Table 5. Determinants of SS2 (Logit regressions with *p*-values in parentheses)

	Model 1 (n=132)		Model 2 (n=116)		Model 3 (n=116)		
	Coef (*p*-value)	Marginal (*p*-value)	Coef (*p*-value)	Marginal (*p*-value)	Coef (*p*-value)	Marginal (*p*-value)	
Gender (Male=1)	1.65 (0.010)[1]	0.27[G] (0.005)[1] -0.14[P] (0.160)[2]	0.93 (0.110)[1]	0.14[G] (0.098)[1] -0.24[P] (0.035)[2]	0.15 (0.432)[1]	At belief=0 0.01[G] (0. 432)[1] -0.16[P] (0.038)[2]	At belief=1 0.04[G] (0. 432)[1] -0.47[P] (0.002)[2]
Priming (Professional Priming=1)	1.38 (0.026)[1]	0.21[F] (0.014)[1] -0.20[M] (0.063)[2]	1.37 (0.033)[1]	0.24[F] (0.020)[1] -0.14[M] (0.153)[2]	1.08 (0.099)[1]	At belief=0 0.12[F] (0.095)[1] -0.05[M] (0.203)[2]	At belief=1 0.25[F] (0.102)[1] -0.25[M] (0.095)[2]
Interaction	-2.44 (0.004)[1]	-0.41 (0.023)[1]	-2.26 (0.004)[1]	-0.38 (0.006)[1]	-2.18 (0.023)[1]	At belief=0 -0.17 (0.046)[1]	At belief=1 -0.50 (0.021)[1]
GMAT			0.012 (0.010)[1]	0.002 (0.006)[1]	0.009 (0.068)[1]	0.001 (0.063)[1]	
Belief as Mediator					2.41 (0.000)[1]	0.39 (0.000)[1]	
Constant	-2.20 (0.000)[2]		-9.79 (0.005)[2]		-8.19 (0.037)[2]		

Note: [1] and [2] denote one- and two-tailed *p*-values. [G], [P], [M] and [F] denote marginal effects estimated at the average GMAT level for the gender/family- and professional-priming treatments, males and females respectively. The marginal effect for GMAT score is calculated at the average GMAT score using a weighted average of the marginal effects evaluated for males and females in each treatment. The marginal effect for Belief is calculated using a weighted average of the marginal effects evaluated for males and females in each treatment at the average GMAT score.

Table 6. Determinants of Belief of Whether or Not one Ranked First in the Imposed Tournament Round (Logit regressions with *p*-values in parentheses)

	Model 1 (n=132)		Model 2 (n=116)	
	Coef (*p*-value)	Marginal (*p*-value)	Coef (*p*-value)	Marginal (*p*-value)
Gender (Male=1)	2.01 $(0.001)^1$	0.40^G $(0.000)^1$ 0.19^P $(0.082)^2$	1.68 $(0.012)^1$	0.31^G $(0.005)^1$ 0.07^P $(0.577)^2$
Priming (Professional Priming=1)	0.92 $(0.080)^1$	0.14^F $(0.068)^1$ -0.06^M $(0.620)^2$	1.22 $(0.053)^1$	0.20^F $(0.039)^1$ -0.04^M $(0.774)^2$
Interaction	-1.16 $(0.078)^1$	-0.21 $(0.095)^1$	-1.37 $(0.068)^1$	-0.24 $(0.082)^1$
GMAT			0.013 $(0.003)^1$	0.003 $(0.000)^1$
Constant	-1.87 $(0.000)^2$		-10.44 $(0.001)^2$	

Note: ^{1} and ^{2} denote one- and two-tailed *p*-values respectively. ^{G}, ^{P}, ^{M} and ^{F} denote marginal effects estimated at the average GMAT level for the gender/family-priming treatment, professional-priming treatment, males and females respectively. The marginal effect for GMAT score is calculated at the average GMAT score using a weighted average of the marginal effects evaluated for males and females in each treatment.

Table 7. Determinants of SSC (Penalized logistic regressions)

	Model 1 (n=132)		Model 2 (n=116)	
	Coef.	*LR* Test: X^2 (*p*-value)	Coef.	*LR* Test: X^2 (*p*-value)
Gender (Male=1)	2.34	2.14 [G] (0.143)	2.06	1.12 [G] (0.290)
		2.35 [P] (0.125)		2.25 [P] (0.134)
Priming (Professional Priming=1)	1.85	3.96 [F] (0.047)	1.46	2.70 [F] (0.100)
		0.88 [M] (0.348)		0.50 [M] (0.478)
Interaction	-3.24	4.41 (0.036)	-2.82	3.00 (0.083)
GMAT			0.002	0.08 (0.775)
Constant	-4.11	37.86 (0.000)	-5.31	1.01 (0.314)

Note: We use Firthlogit, written by Joseph Coveney for use with Stata (Coveney, 2008) to estimate penalized logistic regressions. All *p*-values are calculated using two-tailed Likelihood Ratio (LR) tests. [G] indicates a LR test of the gender effect for the gender/family-priming treatment (i.e. the restricted model imposes the constraint that the coefficient on the gender dummy equals zero), [P] indicates a LR test of the gender effect for the professional-priming treatment (i.e. the restricted model imposes the constraint that the sum of the coefficient on gender and the coefficient on the interaction equals zero), [M] indicates a LR test of the priming effect for males (i.e. the restricted model imposes the constraint that the coefficient on the priming dummy equals zero), and [F] indicates a LR test of the priming effect for females (i.e. the restricted model imposes the constraint that the sum of the coefficient on priming and the coefficient on the interaction equals zero).

FOR REVIEWERS ONLY - NOT FOR PUBLICATION

Supplementary Materials for Reviewers Only

Priming Instruments

Gender/Family Priming Questionnaire

1. What is your gender? M F
2. Are you married? Yes No
3. Are you in a stable relationship? Yes No
4. Do you have child(ren)? Yes No
5. Are you planning to have children in the next 5 years? Yes No
6. Are you going to be the main care-giver (rather than your partner) of your child(ren) once you have child(ren)? Yes No
7. Once you have children, do you plan to continue to work full-time? Yes No

Professional Priming Questionnaire

1. Are you a full-time MBA student? Yes No
2. What is your GMAT score?_____
3. What was your professional background? _____
4. How many years of managerial experience do you have?_____
5. What area would you like to specialize in for your MBA training?_____
6. What is your salary expectation upon the completion of your MBA degree?_____

General Instructions

Thank you for participating today. All of your responses in this study will remain completely anonymous. It is important that during this experiment you do not talk or make any noise that might disrupt others around you. If you have any questions, please raise your hand and the experimenter will answer your questions individually.

During this experiment you will be asked to add up sets of five double-digit integers such as the following.

98	42	69	50	78	

The first round is a warm-up round for you to get familiar with the task while the rest of the rounds will be experimental rounds which will be used to calculate your earnings as explained below. You are not allowed to use a calculator, but may write numbers down on scratch paper provided by us. The numbers are randomly drawn and each problem is presented as above.

You will have a *Workbook* that will contain all of your work. Your task in each round is to solve problems. Your earnings in this experiment will depend on your performance and/or the specific compensation method applied to each of the experimental rounds. **Only of one the experimental rounds will be selected at random for payment at the conclusion of the session.** Once we begin the experiment, you will not be able to look ahead to future pages or to go back to previous pages.

To ensure confidentiality, just write down your participant number on each page of the *Workbook*. Please do not write your name on any of these materials.

Please make sure that you completely understand the instructions for the experiment. Once again, remember not to make any noises that might disturb others around you. If you have any questions, raise your hand and we will answer your questions individually.

Workbook Instructions

Please write all of your work in this *Workbook* and turn pages only when instructed to do so. The next round is a warm-up round and it will last for 2 minutes. There is no payment for this round.

Please wait for instructions before you turn this page.

Compensation Method for Round 1

Round 1 will last 5 minutes. For this round, please decide which one of the two following compensation methods you would like to use for calculating your earnings:

Method A: You will earn $4.00 for each problem you solve correctly. Thus, your total earnings for this round will be: $4.00 × the number of problems solved correctly.

Method B: Your payment will depend on your performance relative to that of the other three participants who are sitting in your row. If the number of problems you solve correctly is higher than that of the other three participants in your row, you will earn $16.00 for each correctly solved problem. Thus, if your performance is better than the other three participants in your row, your total earnings for this round will be: $16.00 × the number of problems you solve correctly. However, if your performance is ranked second, third, or fourth among the participants sitting in your row, you will earn $0 regardless of the number of problems you solve correctly. If there are ties, the winner will be determined randomly from among those who are tied for the best performance.

Now please take a minute to make a decision on which compensation method you would like to adopt for Round 1:

I would like to adopt: Method A Method B (Please circle one).

Compensation Method for Round 2

Round 2 will last 5 minutes. For this round, **Method A** will be used for calculating your earnings:

Method A: You will earn $4.00 for each problem you solve correctly. Thus, your total earnings for this round will be: $4.00 × the number of problems solved correctly.

Compensation Method for Round 3

Round 3 will last 5 minutes. For this round, **Method B** will be used for calculating your earnings:

Method B: Your payment will depend on your performance relative to that of the other three participants who are sitting in your row. If the number of problems you solve correctly is higher than that of the other three participants in your row, you will earn $16.00 for each correctly solved problem. Thus, if your performance is better than the other three participants in your row, your total earnings for this round will be: $16.00 × the number of problems you solve correctly. However, if your performance is ranked second, third, or fourth among the participants sitting in your row, you will earn $0 regardless of the number of problems you solve correctly. If there are ties, the winner will be determined randomly from among those who are tied for the best performance.

Compensation Method for Round 4

Round 4 will last 5 minutes. For this round, please decide which one of the two following compensation methods you would like to have for calculating your earnings:

Method A: You will earn $4.00 for each problem you solve correctly. Thus, your total earnings for this round will be: $4.00 × the number of problems solved correctly.

Method B: Your payment will depend on your performance relative to that of the other three participants who are sitting in your row. If the number of problems you solve correctly is higher than that of the other three participants in your row, you will earn $16.00 for each correctly solved problem. Thus, if your performance is better than the other three participants in your row, your total earnings for this round will be: $16.00 × the number of problems you solve correctly. However, if your performance is ranked second, third, or fourth among the participants sitting in your row, you will earn $0 regardless of the number of problems you solve correctly. If there are ties, the winner will be determined randomly from among those who are tied for the best performance.

Now please take a minute to make a decision on which compensation method you would like to adopt for Round 4.

I would like to adopt: Method A Method B (Please circle one).

Compensation Method for Round 5

Round 5 will last 5 minutes. For this round, please decide which one of the two following compensation methods you would like to have for calculating your earnings:

Method A: You will earn $4.00 for each problem you solve correctly. Thus, your total earnings for this round will be: $4.00 × the number of problems solved correctly.

Method C: There will be a 25% chance that you will earn $16.00 for each problem you solve correctly. There will be a 75% chance that you will earn $0 regardless of the number of problems you solve correctly. We will throw a 4-sided die at the end of the session to determine your earnings. If 1 comes up, your total earnings will be: $16.00 × the number of problems solved correctly. If 2, 3, or 4 comes up, your total earnings will be $0.

Now please take a minute to make a decision on which compensation method you would like to adopt for Round 5:

I would like to adopt: Method A Method C (Please circle one).

Compensation Method for Round 6

You do not need to solve problems in this round. Rather, if "Round 6" is randomly selected for payment, your compensation depends on the number of correct answers provided in Round 2, in which you were working under Method A ($4 for each problem solved correctly).

Please decide which one of the two following compensation methods you would like to have for calculating your earnings in Round 6:

Method A: You will earn $4.00 for each problem you solve correctly. Thus, your total earnings for this round will be: $4.00 × the number of problems solved correctly.

Method B: Your payment will depend on your performance relative to that of the other three participants

who are sitting in your row. If the number of problems you solve correctly is higher than that of the other three participants in your row, you will earn $16.00 for each correctly solved problem. Thus, if your performance is better than the other three participants in your row, your total earnings for this round will be: $16.00 × the number of problems you solve correctly. However, if your performance is ranked second, third, or fourth among the participants sitting in your row, you will earn $0 regardless of the number of problems you solve correctly. If there are ties, the winner will be determined randomly from among those who are tied for the best performance.

Now please take a minute to make a decision on which compensation method you would like to adopt for Round 6:

I would like to adopt: Method A Method B (Please circle one).

<u>Compensation Method for Round 7</u>

You do not need to perform in this round. Rather, if "Round 7" is randomly selected for payment, your compensation depends on the number of correct answers provided in Round 3, in which you were working under Method B.

Please decide which one of the two following compensation methods you would like to have for calculating your earnings in Round 7:

Method A: You will earn $4.00 for each problem you solve correctly. Thus, your total earnings for this round will be: $4.00 × the number of problems solved correctly.

Method B: Your payment will depend on your performance relative to that of the other three participants who are sitting in your row. If the number of problems you solve correctly is higher than that of the other three participants in your row, you will earn $16.00 for each correctly solved problem. Thus, if your performance is better than the other three participants in your row, your total earnings for this round will be: $16.00 × the number of problems you solve correctly. However, if your performance is ranked second, third, or fourth among the participants sitting in your row, you will earn $0 regardless of the number of problems you solve correctly. If there are ties, the winner will be determined randomly from among those who are tied for the best performance.

Now please take a minute to make a decision on which compensation method you would like to adopt for Round 7:

I would like to adopt: Method A Method B (Please circle one).

Sample Workbook Page

						Answer								**Answer**
Q1	69	95	12	72	25			**Q21**	33	55	40	65	48	
Q2	95	36	77	85	50			**Q22**	37	79	88	21	64	
Q3	80	82	55	24	31			**Q23**	12	38	12	48	49	
Q4	65	72	97	87	74			**Q24**	41	79	33	96	60	
Q5	25	30	12	72	97			**Q25**	18	44	68	11	34	
Q6	83	49	47	37	49			**Q26**	38	54	83	64	97	
Q7	30	93	74	71	44			**Q27**	81	27	85	31	87	
Q8	87	80	14	17	27			**Q28**	37	77	21	92	84	
Q9	51	27	71	76	63			**Q29**	43	87	83	32	59	
Q10	31	41	40	10	19			**Q30**	48	73	94	75	35	
Q11	15	17	76	46	30			**Q31**	44	65	79	81	69	
Q12	68	87	98	49	37			**Q32**	63	98	72	46	64	
Q13	14	74	50	85	50			**Q33**	94	73	54	12	13	
Q14	25	15	15	10	92			**Q34**	81	36	43	88	71	
Q15	20	13	88	22	37			**Q35**	83	99	38	20	35	
Q16	59	42	99	50	81			**Q36**	19	11	99	44	53	

Please do not turn this page till you are instructed so.