



Status-Ranking Aversion

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Abstract

Competition involves two dimensions, rivalry for resources and status-ranking. Our experiment isolates the effects of the latter. Participants do a task under non-rivalry incentives. Before doing so, individuals indicate whether they choose an environment with social-status ranking or one without. When a man does a ranking that is imposed on all others, women choose status-ranking less frequently than men. There is no gender difference with a female ranker. This finding complements the established result that women are averse to competing under rivalry for resources, in a qualified way. Women also exhibit status-ranking aversion, but only when ranked by a man.

Keywords: status ranking, competition, gender

JEL codes: C91, J16

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1. Introduction

In natural environments competition involves various dimensions. The most prominent is perhaps a rivalry for resources as described in Stigler (1987). The effects on social welfare of rivalry for resources have been studied in detail in a very large theoretical and empirical literature. A second dimension of competition, which has received less scholarly attention, is the generation of a social-status ranking. In many settings competition leads to a ranking of relative performance; high-ranking performance and winning a competition typically go hand in hand. If such a performance ranking is socially recognized then it leads to a social-status ranking, as defined by Ball et al. (2001).

Laboratory experiments make it possible to systematically disentangle the effects of distinct dimensions of competition. Previous studies have shown that when considered in isolation, both rivalry for resources and social-status ranking lead to women underperforming in comparison to men (Gneezy et al. 2003, Schram et al. 2017). At the same time it has now been solidly established that women tend to avoid having to perform in environments involving rivalry for resources. In a seminal study Niederle and Vesterlund (2007) find that, when given the option of performing a real-effort task under a piece-rate or a competitive payment scheme, women chose the piece rate more often than men. This intriguing result has by now been replicated many times (Balafoutas and Sutter 2012, Wozniak et al. 2014, Brandts et al. 2015) and has given rise to the phrase ‘women shy away from competition’. For a more detailed discussion of the literature on gender and competition, see Croson and Gneezy (2009), Niederle and Vesterlund (2011) or Schram et al. (2017).

In the Niederle and Vesterlund (2007) experiments, participants may perceive a status-ranking dimension of the competition, but this is not salient compared to the rivalry-for-resources dimension. In this paper we want to study whether women shy away from status ranking, that is, whether women (compared to men) prefer not to have to perform under conditions in which there is status ranking. We do this using an experimental design that isolates the status-ranking dimension of competition. Doing so allows us to observe, under controlled conditions, whether women and men differ in their tendency to choose an environment where such ranking takes place. Although rivalry for resources and social-status ranking are two separate dimensions of

competition, it is not obvious, *a priori*, that differences between women and men's attitudes toward one dimension should carry over to the other dimension.

Our set-up builds on that of Schram et al. (2017), which uses groups of six individuals. We introduce two new treatment variations, leading to a two-by-two design. We are interested in seeing what kind of environment – status ranking or not – participants prefer. However, simply allowing each of them to choose one of the environments is not sufficient for understanding participants' attitudes toward social-status ranking. The reason is that if each person chooses separately, then the size of the group of individuals who choose status ranking and whose performance will be compared with each other is endogenous, ranging from a size of one (with effectively no status ranking) to six.

To deal with this issue we introduce the 'own choice' vs. 'imposed choice' treatment variation. In 'own choice' participants choose between the two environments and individual choices are subsequently implemented, with the size of the status-ranking group emerging endogenously, as described above. In the 'imposed choice' treatment participants individually choose between environments, just as under 'own choice', but then one of the individual choices is selected in random-dictator style to be imposed on all participants in the group. In this way participants know that the environment would end up being the same for all members of a group and that if one chooses the status-ranking environment and it is selected for implementation, then the group will be composed of six participants and the performance ranking will involve all six.

The other treatment variation is whether choices can be changed after the task has been performed. In the treatments without a possibility for change initial choices are final, whereas in the change treatments either all participants or the selected dictator can revise their choices, after seeing their own performance in the task.

Starting with the second treatment variation, our results show no statistical differences between the change and no change treatments. However, for the comparisons between the 'own choice' and 'imposed choice' treatments we find some remarkable results. In own choice we find no differences between men and women in choosing between an environment with status ranking and one without. In the 'imposed choice' treatment the effect depends on who does the ranking. With a female ranker, we still observe no gender differences in the choice of environment. In

contrast, a large gender difference occurs with a male ranker. In this case, the chance that a woman chooses status ranking is much lower and significantly less than men. Hence, when it is not clear what the size of the status-ranking group will be women do not shy away from competition, but when they are sure that it will involve the whole group then they do, but only if the ranker is a man.

Here it is important to recall that Niederle and Vesterlund (2007)'s results about shying away from rivalry for resources were obtained for a case where tournament payment involved all members of the group so that our 'imposed choice' condition is the correct standard to compare the effects of rivalry for resources with those of social-status ranking. We conclude that when men do the ranking women shy away from status ranking in an analogous way to how they shy away from rivalry for resources. In this way, women exhibit status-ranking aversion. The rivalry-for-resources results do not find their parallel, however, in social-status ranking by a woman.

The remainder of this note is organized as follows. The following section presents our experimental design and procedures. Section 3 gives our results and is followed by a concluding discussion in Section 4.

2. Experimental Procedures and Design

The experiment was conducted in May 2016 at the laboratory of the Universitat Pompeu Fabra (UPF) in Barcelona. There were 18 sessions with 13 participants each, for a total of 334 participants. As explained below, 226 of these participants played a passive role. Our analysis of the data is therefore based on the decisions of 108 individuals. Participants were mainly undergraduate students who were recruited on a voluntary basis from the UPF subject pool using the ORSEE recruitment software (Greiner 2004).¹

The experiment was partly computerized, using experimental software that was developed in Delphi at the Center for Research in Experimental Economics and political Decision making (CREED) by Jos Theelen.² Instructions were handed out on paper and can be found in Appendix A.

¹ In case of more volunteers than needed for the session, a random selection took place and the remainder of participants was sent off with a €5 show-up fee.

² The software is available from the authors upon request.

Sessions lasted approximately 40 minutes. Participants were paid their earnings, in private, at the end of each session. For the 108 students we base our analysis on, average earnings were €17.16 (including the €5 show-up fee). Passive participants received a €20 flat fee.

Experimental Design

Upon arrival, participants are randomly allocated to two types of players, denoted by A and C respectively. Only A players enter the laboratory and do the tasks described below. C players are taken to separate rooms. In every session there are six A players and seven C players. The experiment consists of four parts.

Part 1

In part 1 (not computerized), A players are informed via the read-aloud instructions (see Appendix A) that they will be asked to perform an individual real-effort task (described in part 3 below). A players are also told before the task that they will be required to report their performance to one of their peers (a C player) after task completion. There are two types of C players. First, each A player is assigned a ‘personal C player’ shared with no other participant. Second, there is a ‘shared C player’ that all A players report to.³ The A player instructions emphasize the importance of doing well in the real-effort task by mentioning that it has been shown to correlate positively with success in professional life.⁴ After finishing the instructions, each A player is individually taken to their personal C player and to the shared C player and reads aloud a text stating that (s)he might return after the task to report her or his performance on the task.⁵ A players need to visit both C players in their respective rooms because at this stage, they do not yet know which of the two they will visit in the end. These visits are done to create the anticipation of having to later report to a C player. Note that the distinction between the two types of C players captures two

³ In Schram et al. (2017), there are also ‘B-players’, who did not report their performance to anyone. Though they are not included in the current experiment, we maintain the labels for the A and C players for reasons of cross-paper consistency.

⁴ Participants were informed that we would provide evidence of this claim after the experiment if so desired. For this purpose, we had copies of Koedel and Tyhurst (2012), which links math skills to labor market outcomes.

⁵ We made sure that the experimenters taking the A players to see the personal or the shared C player alternated between a man and a woman.

distinct environments that a participant can be placed in. The environment where everyone reports to the shared C-player allows for status ranking, while each reporting to a personal C player reflects an environment where no ranking across A players is possible.⁶

Part 2

In part 2 (not computerized), the A players are asked to choose to which C player (their personal C player or the shared C player) they would like to report their performance. The way they report their performance, depends on their choice. A players who choose their personal C player are told (by the experimenter) their own score and their ranking compared to other A players, but are asked to report only their score. A players who choose the shared C player are told their score and their ranking, and are asked to report both.⁷ The implications of the choice of a shared or a personal C player depend on the first treatment variable. In a benchmark condition, which we call '*Own Choice (OC)*', each participant's choice is implemented for her or him alone. This means that some A players may choose to report their performance to the shared C player, while others each report to their own personal C player. This treatment allows us to collect data about gender differences in attitudes for either type of environment (personal vs. shared).⁸ We call the alternative to OC the '*Imposed Choice (IC)*' treatment. Here, also each A player chooses a C player. One A player is then randomly selected and his or her choice is implemented for all. The participants are informed, before making their choices, about this random dictator mechanism.

The second treatment variable involves the timing of the choice of environments. In all sessions, A players choose before the real-effort task whether or not they would like to report their performance to the personal or the shared C player. In the treatment '*No Change (nCH)*', this choice is final. In the '*Change (CH)*' treatment, participants know from the beginning that they will have the option to

⁶ In Schram et al. (2017), these two environments are imposed upon all A players and varied between sessions. The research question addressed there involves the effect of such imposed status ranking on performance. See this previous study for more details.

⁷ The own score and ranking are truthfully reported by reading out loud a form provided by the experimenters (cf. Appendix A).

⁸ There are real-world examples of this kind of option. In many organizations, for example, employees can opt between on the one hand keeping a low profile and on the other hand going for a fast-track involving promotion tournaments where one is compared to others.

change this choice after carrying out the real-effort task. In both treatments, part 2 consists in meeting the shared and personal C players and in making a choice. We think that the timing of the choice could be important, because knowing that one can always change the choice made might decrease its salience during the execution of a task. Having the “ease of mind” that nothing is yet final might affect one’s performance. Anticipation of this effect might make one choose differently before the task.

We vary the two treatment variables (OC/IC) and (nCH/CH) in a full 2x2 between-subject experimental design. Table 1 summarizes our design and provides the numbers of observations per cell. Note that in this experiment, there is no interaction between A players, so each A player provides one independent observation.

Table 1: Treatments and observations

		Possible to Change Choice after Real-Effort Task	
		No (<i>nCH</i>)	Yes (<i>CH</i>)
Implication of choice	Own Choice (<i>OC</i>) (choice holds only for self)	4 sessions 24 A players 28 C players	4 sessions 24 A players 28 C players
	Imposed Choice (<i>IC</i>) (if selected, choice holds for all A players)	5 sessions 30 A players 35 C players	5 sessions 30 A players 35 C players

Part 3

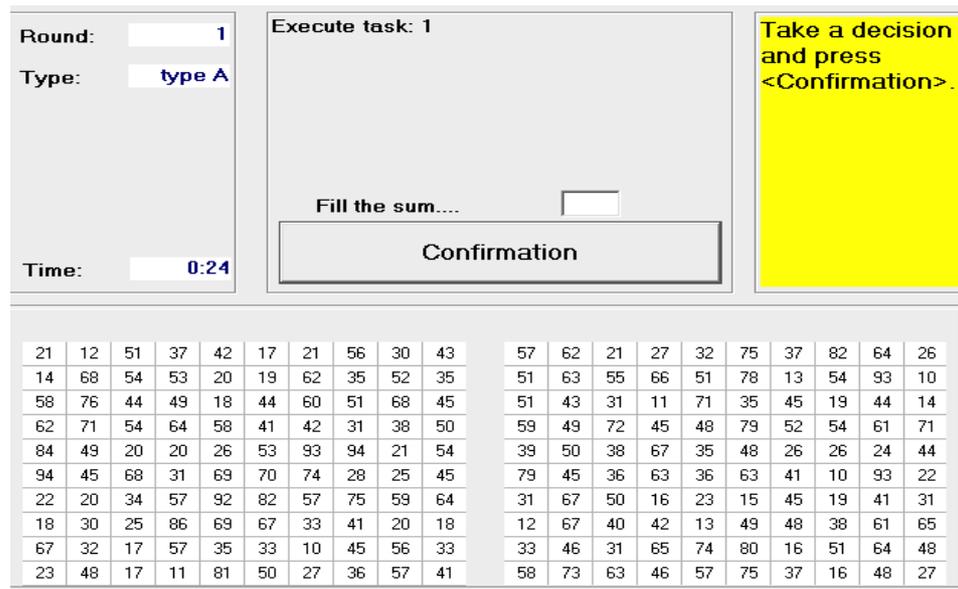
In part 3 of the experiment (which is computerized), A players undertake an individual real-effort task. This consists of a summation of two-digit numbers that must first be found in two 10x10 matrices (for more details, see Weber and Schram 2017). These matrices appear at the bottom half of their computer monitor (Screenshot 1).

For each pair of matrices, each participant has to find the highest number in the left matrix and the highest number in the right matrix. Then, (s)he must calculate the sum of the two numbers. This sum must then be entered at the top-center part of the monitor (Screenshot 1). Each correct answer is rewarded with one euro. Note that this piece-rate remuneration (applied in all treatments) means that there is no rivalry for resources in this task. After a number has been entered, two new matrices appear, regardless of whether or not the sum was correct. The task continues for 15 minutes.

Part 4

Part 4 (not computerized) differs between the two treatment variables depending on the timing of the choice made by an A player about a C player. In *nCH*, A players are required to report their performance (one at a time) to the chosen C player(s). In *CH*, in part 4, A players make the final choices about which C player to report to before reporting to the chosen C player.

Screenshot 1: Screenshot Part 3⁹



Instructions for parts 2, 3 and 4 are distributed after completion of the previous part.

In summary, Figure 1 displays the time line of the experiment.

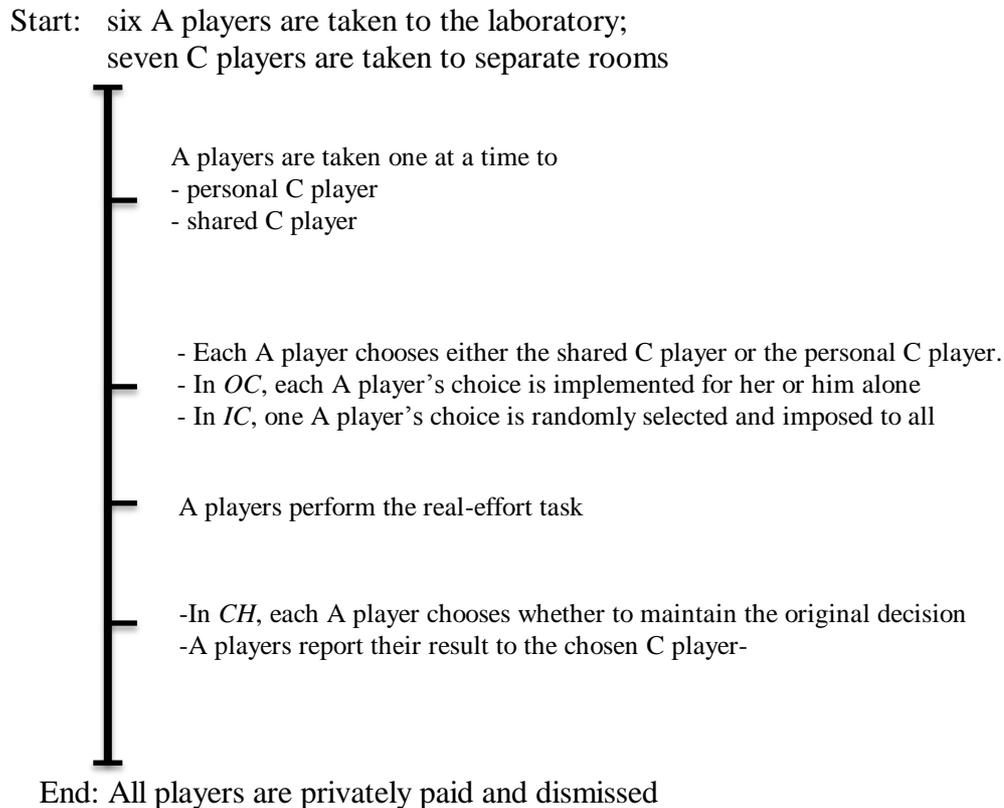
3. Results

We have 108 participants, 55 of which were female. In half of the sessions participants could change the original choice of a C player. 48 observations (26 female) are in the Own-Choice treatment and 60 (29 female) in the Imposed-Choice treatment. For all

⁹ Schram et al. (2017) report that “The instructions inform participants that the numbers in the cells were ‘randomly generated’ (cf. Appendix A). Drawing from a uniform distribution would have led to a high probability of very high sums. To avoid this, for each cell, we first drew a random number between 40 and 99, say X. Then, we drew a random number (uniformly) between 10 and X. This gives a far lower probability of high numbers (the chance of a number being 75 or more is approximately 0.06).”

tests involving comparisons of means between independent samples, we apply two-sided permutation t-tests (henceforth, PtT), using 5000

Figure 1: Time Line



repetitions of Monte-Carlo resampling.¹⁰ We start with a general overview of choices in section 3.1 and address our main research question in 3.2.

3.1. General Overview

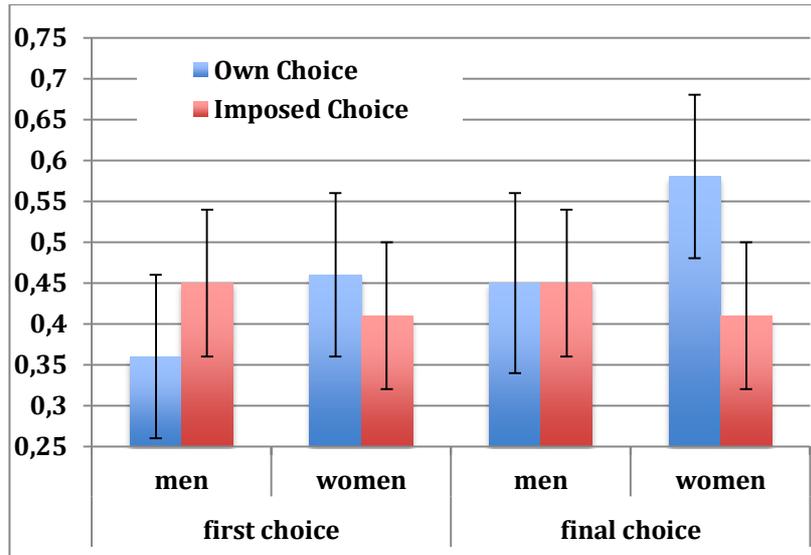
We start by investigating whether the choice for a C player depends on whether the choice holds only for oneself (OC) or it is imposed on the other A players in the session (IC). At this stage of the analysis, we pool across the Change treatments. Figure 2 shows the fractions of times that participants chose the shared C player (as

¹⁰ See, for example, Moir (1998). We provide a motivation for this test in Schram et al. (2017). Importantly, the PtT is to be preferred over the more commonly used Mann-Whitney (MW) test because, contrary to the latter, it specifically tests for differences in means. Also, PtT requires (far) fewer observations than MW for trustworthy inference. We note that all of our results are robust to using MW instead of PtT.

opposed to the personal C player) before they did the real-effort task (first choice) and the ultimately implemented choice (final choice).

The largest difference is observed for women's final choice. 58% of the women's final choice is for the shared C when they do not impose this choice on

Figure 2: Choice of C Player Across OC/IC



Notes. Bars show the fraction of participants that chose to report to the shared C player. The first choice gives the share for the decision made before the task was undertaken. The final choice shows the decision that was ultimately implemented. The final choice may deviate from the first choice only in the CH treatment. Error bars indicate 95% confidence intervals.

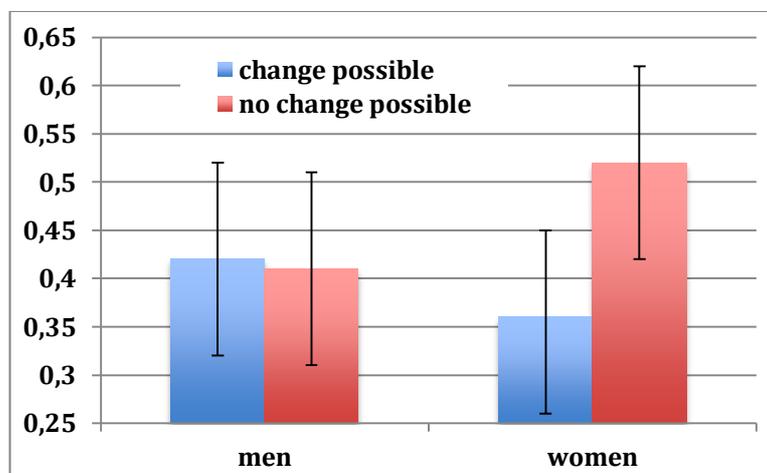
anyone else, while only 41% make this choice when it is imposed upon others. This difference is statistically insignificant, however (PtT, $p = 0.28$, $N = 55$). None of the other differences between OC and IC are statistically significant either.¹¹ We conclude that at this aggregate level one's choice of whether or not to be subjected to status ranking by a shared C does not depend on whether this choice holds only for the decision maker or it is enforced upon all others in the group.

Next, we consider the stability of choices, that is, the extent to which participants in CH decided to choose a different C player after they had completed the task than the one they chose before the task. Recall that all participants in the OC & CH treatment cell had an opportunity to change their choice but only the selected dictators in the IC & CH cell did. Of the 29 participants that had the opportunity, eight (27.6%) chose to change their original decision. This is significantly less than 50%

¹¹ For men, first choice: (PtT, $p = 0.58$, $N=53$); for women, first choice: (PtT, $p = 0.79$, $N=55$); for men, final choice: (PtT, $p>0.99$, $N=53$).

(binomial test, $p = 0.026$, $N = 29$).¹² Of the eight subjects that changed their decision, seven chose a shared C after originally having chosen a personal C.

Figure 3: Choice of C Player across nCH/CH



Notes. Bars show the fraction of participants that chose to report to the shared C player before doing the task. Error bars indicate 95% confidence intervals.

We also ask whether the possibility of later changing one's choice affects the original choice made. Figure 3 shows the frequencies of choosing a shared C for men and women. For men, the option to change has little effect on their first choice (PtT, $p > 0.99$, $N = 53$). Though women are 16%-points more likely to choose the shared C player when they cannot change this decision (52%) than when they can (36%), the difference is statistically insignificant for them as well (PtT, $p = 0.28$, $N = 55$). We conclude that knowing that one can later change the decision does not affect the choice of a C player before undertaking the task. From here onward, we therefore use the first choice of a C player as a measure of the participant's preferred choice.

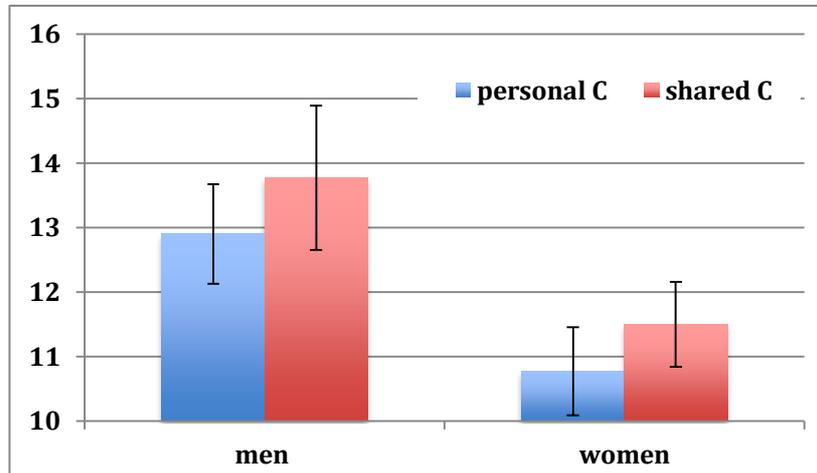
The choice of a C player might be affected by how one expects to perform in the task. Figure 4 shows (ex post) performance dependent on this choice, where performance is measured as the number of correct summations in the task.¹³ Of course, the selection effect underlying this result –the C player one chooses might depend on

¹² Fewer men (3 out of 17) than women (5 out of 12) chose to change. For men, this is a significantly lower probability than 50%, for women it is not. The numbers of observations are too low for further statistical comparisons.

¹³ In OC & nCH, the own choice is always implemented and performance might also be affected by the choice. In the other treatment cells, the implemented choice depends on whether or not the decision was changed and on the decision made by the A player selected for implementation of her or his decision.

how one expects to perform, hence, the division over the two types of C players is not random— may be different for men than for women. We observe relatively minor differences in performance between those who choose the personal C player and those who choose the shared C player. For both men and women, the

Figure 4: Performance and Chosen C player



Notes. Bars show the performance (measured as the number of correct summations). Error bars indicate 95% confidence intervals.

difference is statistically insignificant (men: PtT, $p = 0.51$, $N = 53$; women: PtT, $p = 0.47$, $N = 58$).¹⁴

3.2 Gender and Status-Ranking Aversion

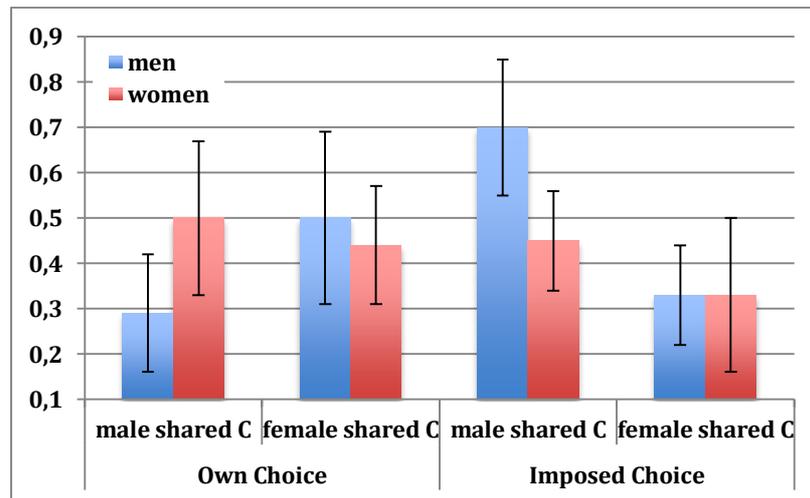
We now turn to our main research question, which concerns gender differences in the choice of C player, that is, in the choice of whether one wants to be subjected to a status ranking. Considering the aggregate data, we observe that women choose the shared C slightly more often than men (44% vs. 42%). This difference is statistically insignificant (PtT, $p = 0.85$, $N = 108$). As can be observed in Figure 2, women choose the shared C more often than men in OC (46% vs. 36%) and less often than men in IC

¹⁴ Figure 4 also shows that men outperform women, independently of the C player chosen. After having chosen the personal C player, men perform significantly better than women (PtT, $p = 0.04$, $N = 62$). The difference after having chosen the shared C player is marginally significant (PtT, $p = 0.08$, $N = 46$). Note that one cannot conclude from this that women underperform compare to men even in the absence of status ranking. Many factors that are not orthogonal to our treatments affect performance of men and women facing the personal C. These include selection effects that might differ between men and women, dictators determining one's C player choice, and knowing that one has the opportunity to change the choice after doing the task. The experiment in Schram et al. (2017) is explicitly designed to study how reporting to an exogenously imposed personal C player affects performance in comparison to having to report to an exogenously imposed shared C and we observe no gender differences in the former case.

(41% vs. 45%). Neither difference is statistically significant (OC: PtT, $p = 0.56$, $N = 48$; IC: PtT, $p = 0.79$, $N = 60$).¹⁵

A participant's C-player choice might depend, however, on the gender of the two C players she can choose between. First, we consider whether the gender of the shared C player affects this choice.¹⁶ Figure 5 shows the fraction of times that the shared C player was chosen dependent on her or his gender. The results show more variation in men's choices than in women's. In particular, men choose a male shared C relatively rarely in OC and relatively often in IC. This difference is marginally significant (PtT, $p = 0.09$, $N = 24$). The differences appearing in Figure 5 are based on relatively low numbers of observations, however, due to the multiple subdivisions used.

Figure 5: Gender of C Player



Notes. Bars show the fraction of participants that chose to report to the shared C player, conditional on the shared C player's gender. Error bars indicate 95% confidence intervals.

For statistical testing we therefore use a logit specification and regress the choice to report to the shared C player on the genders of the C players and a set of controls. We do so separately for OC and IC and correct for the treatments where the participant

¹⁵ IC provides the most direct comparison to the Niederle and Vesterlund (2007) results on gender differences in opting for a rivalry for resources. Taking the Niederle and Vesterlund observed frequencies of choosing for competition (35% for women; 73% for men), a power of 80% would require a sample of 26 men and 26 women. The test presented here is based on choices by 31 men and 29 women. The lack of an effect can therefore not be attributed to an underpowered test.

¹⁶ A further subdivision depending also on the gender of the personal C player would reduce the number of men and women in each too much to provide meaningful summary statistics. The evidence provided in the logit regression below shows no evidence that the gender of the personal C player affects the choice.

had the option to change his or her decision after doing the task. Model I in Table 1 shows the results without correcting for the genders of the C players. Here we find no gender differences in the likelihood of choosing the shared C player. Once again, the Vesterlund and Niederle (2007) result for rivalry for resources does not appear to carry over to the status-ranking dimension of competition.

Table 1: Choosing the Shared C Player

	Model I		Model II	
	OC	IC	OC	IC
Change possible	-0.05	-0.06	-0.44	-0.13
Female Decision Maker	0.06	-0.05	0.24	- 0.54**
Age/100	-0.01	2.85	-0.51	6.37
Economics/Business	-0.13	0.26	-0.12	0.29
Male facing Female Personal C	—	—	0.36	-0.29
Male facing Female Shared C	—	—	0.53*	- 0.47**
Female facing Female Personal C	—	—	0.01	0.26
Female facing Female Shared C	—	—	0.33	-0.22
N	48	60	48	60

Note. Cells give the marginal effects derived from a logit regression of the choice of the shared C player on the following linear combination of regressors: β_1 *{dummy indicating CH} + β_2 *{dummy indicating a female decision maker} + β_3 *{the decision maker's age divided by 100} + β_4 *{dummy indicating that the decision maker is majoring in economics (including business)} + β_5 *{dummy indicating that the decision maker's personal C player is female} + β_6 *{dummy indicating that the decision maker's shared C player is female} + β_7 *{dummy indicating that the decision maker is female *and* her personal C player is female} + β_8 *{dummy indicating that the decision maker is female *and* her shared C player is female}. The marginal effect of being a male facing a female personal (shared) C is given by β_5 (β_6). The marginal effect of being a female facing a female personal (shared) C player is given by $\beta_5 + \beta_7$ ($\beta_6 + \beta_8$). */** : significant at the 5%/1%-level.

This conclusion radically changes, however, if we control for the genders of the C- players in interaction with the gender of the decision maker. First, we observe in model II that neither men nor women are significantly affected in their choice by the gender of the personal C player. Women are also not affected by the gender of the shared C player, but men are. This effect is significantly positive in OC and significantly negative in IC. This means that men prefer to report to the shared C player if she is female and if this choice is not imposed on others (as observed in Figure 5). If the shared C player is female and the choice is imposed on others, however, men prefer to go to the personal C player. Though this is an interesting result, it is not

directly related to our research question. Correcting for these male attitudes regarding the gender of the C players does, however, have a tremendous effect on our main variable. We still observe no gender differences in the choice to report to a shared C in OC.

In contrast, in IC a large and significant effect is found. To understand this effect, first note that the benchmark environment in model II is one where a man faces a male ranker. The difference with a female facing a male ranker is given by the effect of the ‘Female Decision Maker’ dummy. This shows that when facing a male ranker, women choose to be ranked 54%-points less often than men facing a man do. Compared to men, women are status-ranking averse when the ranking is done by a man.

To check for gender differences when facing a female ranker, we first notice that compared to the case of a male ranker, men choose to be ranked 47% points less often. In comparison, the aggregate marginal effect for women is $-0.54 - 0.22 = -0.76$. This difference is statistically insignificant ($\chi^2(1) = 1.33$, $p = 0.25$).¹⁷ The results in Table 1 thus imply that there are no gender differences in attitudes towards such status ranking when the ranking is done by a women.

4. Concluding Discussion

In their survey on gender and competition Niederle and Vesterlund (2011) write:

“The two strands of literature, choosing to enter a tournament compared with piece-rate scheme as in Niederle & Vesterlund (2007) and performing well in a tournament incentive scheme as in Gneezy et al. (2003), paint similar pictures. Suppose we refer to the decision to enter the Niederle-Vesterlund tournament as competitive. Similarly, we refer to the decision to perform highly under the Gneezy et al. tournament as competitive. Then both strands of literature lead to the same conclusion. Women are often less competitive than men in mixed-sex tournaments.”

¹⁷ In terms of the original regression equation as depicted in the note to Table 1, we compare $\beta_2 + \beta_6 + \beta_8$ to β_6 . That is, we test whether $\beta_2 + \beta_8$ differs significantly from zero, which we reject.

These conclusions are based on experimental data that creates competition in the sense of a rivalry for resources and makes this much more salient than social-status ranking. In our work we abstract from rivalry for resources by using a non-competitive payment scheme. While we previously showed that women underperform compared to men when there is social-status ranking (Schram et al. 2017), here we have studied whether they shy away from entering an environment involving social-status ranking. The comparison to the results reported for rivalry for resources is not as straightforward. We do find that compared to men, women avoid situations where status ranking can take place, but only when this ranking is done by a man.

The question arises what the joint impact of rivalry for resources and social-status ranking will be in a setting where both are present, as is the case in many competitive environments. This is an issue that we leave for future research.

Our results thus document that women are averse to social-status ranking (only) when the ranking is done by a man and when it is amongst all members of a group (as in our Imposed Choice treatment). From a practical point of view this implies that women might be underrepresented in the pool of applicants for professions for which rivalry for resources is less important and status ranking is salient. We have in mind, for example, positions in the judiciary, the military, NGOs, the churches and universities. In these professions people in high positions typically enjoy high status, while payoff differences across different ranks are often not large. Women shying away from applying for such positions can have a significant social and economic impact.

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Appendix A: Experimental Instructions

The instructions were read aloud in Spanish. Below is an English translation for each treatment. Treatment acronyms are as follows: OC=Own Choice; IC=Imposed Choice; nCH=no change of decision; CH= original decision can be changed.

I. OC / nCH

A-Players

Part 1

Welcome to this experiment.

You will receive 5 euro for your participation in the experiment. Depending on your decisions and the decisions of other participants in today's experiment, you can earn money. You will be paid privately at the end of the experiment. In the experiment you will remain anonymous. Your decisions will only be linked to your station id and not to your name in any way. The experiment will take approximately 1 hour.

The participants in this experiment have been randomly divided into two groups. Six of you are of type A, seven of type C. The participants of type A are in this room, while the participants of type C are each in their own private room.

You are of type A.

The experiment is divided into two stages. You will receive instructions for each stage when it starts. We guarantee that everything we tell you in these instructions will proceed precisely as described. If you have any doubts about whether we are acting in the way described in the instructions, we will be happy to show you at the end of the experiment that this is the case.

We start with stage 1.

In stage 1 the participants of type A will all independently perform a task during 15 minutes.

This is an important task that is often used to measure people's talents. Many scientific studies have found that people who do well in a task like this are more successful in professional life than people who do less well. You will not be told, however, what is typically a good or a bad score for this task.

The task is as follows. You will see two matrices on the computer screen. Each matrix has 10 rows and 10 columns and is filled with randomly generated numbers. Your job is to find the largest number in each of the matrices and then to add them up. You are not allowed to use calculators, but you can use the paper and pencil that you have found on your desk.

After entering a sum the computer will tell you whether it is correct or incorrect (please note that the time will continue to run while you see this result). Subsequently, irrespective of whether your answer is correct or incorrect, a new pair of matrices will appear. This means that for each pair, you have only one attempt to provide the correct answer. However, there will always be new matrices as long as you are within the 15 minutes limit.

For each correct sum you will receive 1 euro and for each incorrect sum you will receive 0 euros. The total number of euros you have gained will be visible on the screen at the end of this stage.

Remember that studies have found that people who do well in a task like this are more successful in professional life. You will not know how people typically perform in this task. However, you will be told, how your performance relates to the other 5 participants of type A in this experiment, today.

After this stage, you will be told your own score and how you rank in relation to the other A-participants. You will then be asked to inform one participant of type C about your score. There are

two types of participant C. First, each A-participant has been assigned an own C- participant. We call this your 'personal' C- participant. No other participant will ever report to your personal C- participant. Similarly, you will never report to any other A-player's personal C- participant. One of the C-participants has been dedicated the 'shared' C-participant. More than one A-participant may report their result to this shared C-participant. It will be explained later how it is determined whether you will report to your personal C-participant or to the shared C-participant.

After the task, you will have to go one at a time to a separate room where this C participant will be waiting. No C-player knows what task you did and what the score means. They have only been told that a higher score is thought to lead to a more successful professional life. Importantly, the shared C-participant will hear your score and how it ranks to the other A participants. Your personal C-participant will not be told the score of any other A-participant.

We would like you to see both your personal C participant and the shared C-participant that you may present your score to. For this reason, each of you will now first leave the room and read aloud a text that will be given to you. You will do this twice; first to your personal C-participant and then to the shared C-participant. Note that each of you will be going to the same, shared C-participant.

[After they have returned:]

Now, you will be given a chance to choose to which C-participant you wish to report your score after you have finished the summation task. Recall that the shared C-participant can compare your score to others' but the personal C-player cannot. If you choose your personal C-participant, you will read to her or him your score, but not how it ranks among the A-participants. If you choose the shared C-participant, you will read to her or him your score, and how it ranks among the A-participants.

We will now hand out a form on which you can indicate your choice.

Part 2

This brings us to the end of the first stage of the experiment.

Now you will be asked to inform the chosen C-participant about your score. This is a C-participant C that you visited before. If you chose to report to your personal C-participant, he or she will hear only your score. If you chose to report to the shared C-participant, he or she will hear the scores and ranks of all A-participants that chose to report to her or him.

For this purpose, each participant of type will receive from the experimenters a closed envelop with his/her score. Then each A-participant will be accompanied one by one by the experimenters to the room where the chosen C-participant is waiting. There, each A-participant will open the envelop and read aloud the text to the C-participant. Then the A-participant will return to her or his desk and the next A player will be taken.

Remember that the C-participant does not know what task you did and what the score means. He or she has only been told that a higher score is thought to lead to a more successful professional life.

II. OC / CH

A-Players

Part 1

Welcome to this experiment.

You will receive 5 euro for your participation in the experiment. Depending on your decisions and the decisions of other participants in today's experiment, you can earn money. You will be paid privately at the end of the experiment. In the experiment you will remain anonymous. Your decisions will only be linked to your station id and not to your name in any way. The experiment will take approximately 1 hour.

The participants in this experiment have been randomly divided into two groups. Six of you are of type A, seven of type C. The participants of type A are in this room, while the participants of type C are each in their own private room.

You are of type A.

The experiment is divided into two stages. You will receive instructions for each stage when it starts. We guarantee that everything we tell you in these instructions will proceed precisely as described. If you have any doubts about whether we are acting in the way described in the instructions, we will be happy to show you at the end of the experiment that this is the case.

We start with stage 1.

In stage 1 the participants of type A will all independently perform a task during 15 minutes.

This is an important task that is often used to measure people's talents. Many scientific studies have found that people who do well in a task like this are more successful in professional life than people who do less well. You will not be told, however, what is typically a good or a bad score for this task.

The task is as follows. You will see two matrices on the computer screen. Each matrix has 10 rows and 10 columns and is filled with randomly generated numbers. Your job is to find the largest number in each of the matrices and then to add them up. You are not allowed to use calculators, but you can use the paper and pencil that you have found on your desk.

After entering a sum the computer will tell you whether it is correct or incorrect (please note that the time will continue to run while you see this result). Subsequently, irrespective of whether your answer is correct or incorrect, a new pair of matrices will appear. This means that for each pair, you have only one attempt to provide the correct answer. However, there will always be new matrices as long as you are within the 15 minutes limit.

For each correct sum you will receive 1 euro and for each incorrect sum you will receive 0 euros. The total number of euros you have gained will be visible on the screen at the end of this stage.

Remember that studies have found that people who do well in a task like this are more successful in professional life. You will not know how people typically perform in this task. However, you will be told, how your performance relates to the other 5 participants of type A in this experiment, today.

After this stage, you will be told your own score and how you rank in relation to the other A-participants. You will then be asked to inform one participant of type C about your score. There are two types of participant C. First, each A-participant has been assigned an own C-participant. We call this your 'personal' C- participant. No other participant will ever report to your personal C-participant. Similarly, you will never report to any other A-player's personal C-participant.

One of the C-participants has been designated the 'shared' C-participant. More than one A-participant may report their result to this shared C-participant. It will be explained later how it is determined whether you will report to your personal C-participant or to the shared C-participant.

After the task, you will have to go one at a time to a separate room where this C participant will be waiting. No C-participant knows what task you did and what the score means. They have only been told that a higher score is thought to lead to a more successful professional life. Importantly, the shared C-participant will hear your score and how it ranks to the other A-participants. Your personal C-participant will not be told your rank, nor the score of any other A-participant.

We would like you to see both your personal C-participant and the shared C-participant that you might present your score to. For this reason, each of you will now first leave the room and read aloud a text that will be given to you. You will do this twice; first to your personal C-participant and then to the shared C-participant. Note that each of you will be going to the same shared C-participant.

[After they have returned:]

Now, you will be given a chance to choose to which C-participant you wish to report your score after you have finished the summation task. Recall that the shared C-participant can compare your score to others' but the personal C-player cannot. If you choose your personal C-participant, you will read to her or him your score, but not how it ranks among the A-participants. If you choose the shared C-participant, you will read to her or him your score, and how it ranks among the A-participants.

We will now hand out a form on which you can indicate your choice.

After you have finished the summation task. You will be given an opportunity to confirm or change the choice you make now. Therefore, the choice you make now for the shared C-participant or the personal C-participant is not yet final.

Part 2

This brings us to the end of the first stage of the experiment.

Before you report your score, we will first give you a chance to confirm or change your choice of a C-participant. If you confirm, you will report to C-participant that you chose before the task. If you change, you will report to the other C-player. We will now hand out a form in which you can indicate whether or not you confirm.

[after forms have been collected:]

Now you will be asked to inform the chosen C-participant about your score. This is a C-participant C that you visited before. If you chose to report to your personal C-participant, he or she will hear only your score. If you chose to report to the shared C-participant, he or she will hear the scores and ranks of all A-participants that chose to report to her or him.

For this purpose, each participant of type will receive from the experimenters a closed envelop with his/her score. Then each A-participant will be accompanied one by one by the experimenters to the room where the chosen C-participant is waiting. There, each A-participant will open the envelop and read aloud the text to the C-participant. Then the A-participant will return to her or his desk and the next A player will be taken.

Remember that the C-participant does not know what task you did and what the score means. He or she has only been told that a higher score is thought to lead to a more successful professional life.

III. IC / nCH

A-Players

Part 1

Welcome to this experiment.

You will receive 5 euro for your participation in the experiment. Depending on your decisions and the decisions of other participants in today's experiment, you can earn money. You will be paid privately at the end of the experiment. In the experiment you will remain anonymous. Your decisions will only be linked to your station id and not to your name in any way. The experiment will take approximately 1 hour.

The participants in this experiment have been randomly divided into two groups. Six of you are of type A, seven of type C. The participants of type A are in this room, while the participants of type C are each in their own private room.

You are of type A.

The experiment is divided into two stages. You will receive instructions for each stage when it starts. We guarantee that everything we tell you in these instructions will proceed precisely as described. If you have any doubts about whether we are acting in the way described in the instructions, we will be happy to show you at the end of the experiment that this is the case.

We start with stage 1.

In stage 1 the participants of type A will all independently perform a task during 15 minutes.

This is an important task that is often used to measure people's talents. Many scientific studies have found that people who do well in a task like this are more successful in professional life than people who do less well. You will not be told, however, what is typically a good or a bad score for this task.

The task is as follows. You will see two matrices on the computer screen. Each matrix has 10 rows and 10 columns and is filled with randomly generated numbers. Your job is to find the largest number in each of the matrices and then to add them up. You are not allowed to use calculators, but you can use the paper and pencil that you have found on your desk.

After entering a sum the computer will tell you whether it is correct or incorrect (please note that the time will continue to run while you see this result). Subsequently, irrespective of whether your answer is correct or incorrect, a new pair of matrices will appear. This means that for each pair, you have only one attempt to provide the correct answer. However, there will always be new matrices as long as you are within the 15 minutes limit.

For each correct sum you will receive 1 euro and for each incorrect sum you will receive 0 euros. The total number of euros you have gained will be visible on the screen at the end of this stage.

Remember that studies have found that people who do well in a task like this are more successful in professional life. You will not know how people typically perform in this task. However, you will be told, how your performance relates to the other 5 participants of type A in this experiment, today.

After this stage, you will be told your own score and how you rank in relation to the other A-participants. You will then be asked to inform one participant of type C about your score. There are two types of participant C. First, each A-participant has been assigned an own C- participant. We call this your 'personal' C- participant. No other participant will ever report to your personal C-participant. Similarly, you will never report to any other A-player's personal C- participant.

One of the C-participants has been dedicated the 'shared' C-participant. More than one A-participant may report their result to this shared C-participant. It will be explained later how it is determined whether you will report to your personal C-participant or to the shared C-participant.

After the task, you will have to go one at a time to a separate room where this C participant will be waiting. No C-player knows what task you did and what the score means. They have only been told that a higher score is thought to lead to a more successful professional life. Importantly, the shared C-participant will hear your score and how it ranks to the other A participants. Your personal C-participant will not be told the score of any other A-participant.

We would like you to see both your personal C participant and the shared C-participant that you may present your score to. For this reason, each of you will now first leave the room and read aloud a text that will be given to you. You will do this twice; first to your personal C-participant and then to the shared C-participant. Note that each of you will be going to the same shared C-participant.

[After they have returned:]

Now, you will be given a chance to choose to which C-participant you wish to report your score after you have finished the summation task. Recall that the shared C-participant can compare your score to others' but the personal C-player cannot. If you report to your personal C-participant, you will read to her or him your score, but not how it ranks among the A-participants. If you report to the shared C-participant, you will read to her or him your score, and how it ranks among the A-participants.

After everyone has made a choice, we will randomly pick one of the decisions made and apply it to all A-participants. Thus, if the chosen A-participant has indicated that he or she wants to report to the personal C-participant, then all A-participants will report to their own personal C-participant. If the chosen A-participant has indicated that he or she wants to report to the shared C-participant, then all A-participants will report to the (same) shared C-participant.

We will now hand out a form on which you can indicate your choice.

[randomly choose a form and announce the decision]

Part 2

This brings us to the end of the first stage of the experiment.

Now you will be asked to inform the chosen C-participant about your score. This is a C-participant C that you visited before. If the chosen C-participant is the personal C-participant, he or she will hear only your score. If the chosen C-participant is the shared C-participant, he or she will hear the scores and ranks of all A-participants.

For this purpose, each participant of type will receive from the experimenters a closed envelop with his/her score. Then each A-participant will be accompanied one by one by the experimenters to the room where the chosen C-participant is waiting. There, each A-participant will open the envelop and read aloud the text to the C-participant. Then the A-participant will return to her or his desk and the next A player will be taken.

Remember that the C-participant does not know what task you did and what the score means. He or she has only been told that a higher score is thought to lead to a more successful professional life.

IV. IC / CH

A-Players

Part 1

Welcome to this experiment.

You will receive 5 euro for your participation in the experiment. Depending on your decisions and the decisions of other participants in today's experiment, you can earn money. You will be paid privately at the end of the experiment. In the experiment you will remain anonymous. Your decisions will only be linked to your station id and not to your name in any way. The experiment will take approximately 1 hour.

The participants in this experiment have been randomly divided into two groups. Six of you are of type A, seven of type C. The participants of type A are in this room, while the participants of type C are each in their own private room.

You are of type A.

The experiment is divided into two stages. You will receive instructions for each stage when it starts. We guarantee that everything we tell you in these instructions will proceed precisely as described. If you have any doubts about whether we are acting in the way described in the instructions, we will be happy to show you at the end of the experiment that this is the case.

We start with stage 1.

In stage 1 the participants of type A will all independently perform a task during 15 minutes.

This is an important task that is often used to measure people's talents. Many scientific studies have found that people who do well in a task like this are more successful in professional life than people who do less well. You will not be told, however, what is typically a good or a bad score for this task.

The task is as follows. You will see two matrices on the computer screen. Each matrix has 10 rows and 10 columns and is filled with randomly generated numbers. Your job is to find the largest number in each of the matrices and then to add them up. You are not allowed to use calculators, but you can use the paper and pencil that you have found on your desk.

After entering a sum the computer will tell you whether it is correct or incorrect (please note that the time will continue to run while you see this result). Subsequently, irrespective of whether your answer is correct or incorrect, a new pair of matrices will appear. This means that for each pair, you have only one attempt to provide the correct answer. However, there will always be new matrices as long as you are within the 15 minutes limit.

For each correct sum you will receive 1 euro and for each incorrect sum you will receive 0 euros. The total number of euros you have gained will be visible on the screen at the end of this stage.

Remember that studies have found that people who do well in a task like this are more successful in professional life. You will not know how people typically perform in this task. However, you will be told, how your performance relates to the other 5 participants of type A in this experiment, today.

After this stage, you will be told your own score and how you rank in relation to the other A-participants. You will then be asked to inform one participant of type C about your score. There are two types of participant C. First, each A-participant has been assigned an own C-participant. We call this your 'personal' C-participant. No other participant will ever report to your personal C-participant. Similarly, you will never report to any other A-player's personal C-participant.

One of the C-participants has been dedicated the 'shared' C-participant. More than one A-participant may report their result to this shared C-participant. It will be explained later how it is determined whether you will report to your personal C-participant or to the shared C-participant.

After the task, you will have to go one at a time to a separate room where this C participant will be waiting. No C-participant knows what task you did and what the score means. They have only been told that a higher score is thought to lead to a more successful professional life. Importantly, the shared C-participant will hear your score and how it ranks to the other A-participants. Your personal C-participant will not be told your rank, nor the score of any other A-participant.

We would like you to see both your personal C-participant and the shared C-participant that you might present your score to. For this reason, each of you will now first leave the room and read aloud a text that will be given to you. You will do this twice; first to your personal C-participant and then to the shared C-participant. Note that each of you will be going to the same shared C-participant.

[After they have returned:]

Now, you will be given a chance to choose to which C-participant you wish to report your score after you have finished the summation task. Recall that the shared C-participant can compare your score to others' but the personal C-player cannot. If you report to your personal C-participant, you will read to her or him your score, but not how it ranks among the A-participants. If you report to the shared C-participant, you will read to her or him your score, and how it ranks among the A-participants.

After everyone has made a choice, we will randomly pick one of the decisions made and apply it to all A-participants. Thus, if the chosen A-participant has indicated that he or she wants to report to the personal C-participant, then all A-participants will report to their own personal C-participant. If the chosen A-participant has indicated that he or she wants to report to the shared C-participant, then all A-participants will report to the (same) shared C-participant.

We will now hand out a form on which you can indicate your choice.

After you have finished the summation task. The selected A-participant will be given an opportunity to confirm or change the choice he or she makes now. Therefore, the choice you make now for the shared C-participant or the personal C-participant is not yet final.

Part 2

This brings us to the end of the first stage of the experiment.

Before you report your score, we will first give the selected A-participant a chance to confirm or change her or his choice of a C-participant. If he or she confirms, you will report to the C-participant that he or she chose before the task. If he or she changes, you will report to the other C-player. We will now give her or him a form in which he or she can indicate whether or not he or she confirms. To maintain anonymity, everyone else will also receive a form to mark. This has no further consequences, however. Only the choice by the A-participant we selected before the task will affect the final decision.

[after forms have been collected:]

Now you will be asked to inform the chosen C-participant about your score. This is a C-participant that you visited before. If the chosen C-participant is the personal C-participant, he or she will hear only your score. If the chosen C-participant is the shared C-participant, he or she will hear the scores and ranks of all A-participants.

For this purpose, each participant of type will receive from the experimenters a closed envelop with his/her score. Then each A-participant will be accompanied one by one by the experimenters to the room where the chosen C-participant is waiting. There, each A-participant will open the envelop and read aloud the text to the C-participant. Then the A-participant will return to her or his desk and the next A player will be taken.

Remember that the C-participant does not know what task you did and what the score means. He or she has only been told that a higher score is thought to lead to a more successful professional life.

C-players (all treatments)

Welcome to this experiment.

Your role in today's experiment is a passive one. You will not be asked to make any decisions.

Your only task is to hear the results of a task performed by one of the other participants. You will not be informed about the content of this task. All you need to know is that it is an important task that is often used to measure people's talents. Many scientific studies have found that people who have a high score in a task like this are more successful in professional life than people who have a low score. You will not be told, however, what is typically a good or a bad score for this task.

Each of you will be seated in a separate room. One of us will take you there, shortly. While you are waiting for this, feel free to read anything you like, or to browse your phone. After you have been taken to a separate room, and before the other participants have started their task one or more of them will be taken to you. Each will read a text to you and return to the laboratory. After all the other participants have completed their tasks, the same participant or participants may again be taken to you. He or she will read to you his or her score.

You may not speak or interact with the other participants in any way. After they have left, you will be taken back to this room.

For your role in today's experiment, you will receive 15 euros on top of the 5 euros show-up fee. You will be paid and dismissed after the participants have told each of you their scores.

Finally, please treat the room you will be in with respect. You are a guest here, so please do not touch anything that is not yours.

Texts read to Personal C-players by A-players

Before the summation task:

Your station id is
You must go to room #

Please read the following text to the participant waiting for you in that room:

“I will go back and do a task. After I have done so, I may come back and tell you my score.”

After the summation task:

Your station id is
You must go to room #

Please read the following text to the participant waiting for you in that room:

“My score on the task I did was”

Texts Read to Shared C players by A-players

Before the summation task:

Your station id is
You must go to room #

Please read the following text to the participant waiting for you in that room:

“I will go back and do a task. After I have done so, I may come back and tell you my score. If so, I will also tell you how my score ranked amongst the six participants.”

After the summation task:

Your station id is
You must go to room #

Please read the following text to the participant waiting for you in that room:

“My score on the task I did was With this score, I was ranked amongst the six participants.”

Forms to indicate choice of C-player

I. OC / nCH

Your station id is

Please check a box to indicate your choice:

- After the task, I wish to report my score to my personal C-participant.
- After the task, I wish to report my score and rank to the shared C-participant.

II. OC / CH

[Before the task:]

Your station id is

Please check a box to indicate your choice:

- After the task, I wish to report my score to my personal C-participant.
- After the task, I wish to report my score and rank to the shared C-participant.

I know that I will be asked to confirm or change my choice after doing the task.

[After the task:]

Your station id is

Before the task, you chose:

[to be marked by us:]

- After the task, I wish to report my score to my personal C-participant.
- After the task, I wish to report my score and rank to the shared C-participant.

Please check a box to indicate your choice:

- I confirm this choice.
 - I would like to change to the other option.
-

III. IC / nCH

Your station id is

Please check a box to indicate your choice:

- After the task, I wish everyone to report their score to their personal C-participant.
 - After the task, I wish everyone to report their score and rank to the shared C-participant.
-

IV. Change of environment / change of choice

[Before the task:]

Your station id is

Please check a box to indicate your choice:

- After the task, I wish everyone to report their score to their personal C-participant.
- After the task, I wish everyone to report their score and rank to the shared C-participant.

I know that if my choice is selected, I will be asked to confirm or change my choice after doing the task.

[After the task:]

Your station id is

Before the task, you chose:

[to be marked by us:]

- After the task, I wish everyone to report their score to their personal C-participant.
- After the task, I wish everyone to report their score and rank to the shared C-participant.

Please check a box to indicate your choice:

- I confirm this choice.
- I would like to change to the other option.