Closing the Gender Gap in Multilateral Negotiations Through Institutional Changes

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Abstract

Experimental evidence from different subject pools shows that men earn more than women in majoritarian negotiations. Three stylized modes of behavior emerge as potential reasons for the gap: men sort into making opening offers more often, prefer to partner with other men, and when partnering with each other, their coalitions are more stable compared to mixed-gender ones. We design three experimental interventions to investigate the explanatory role each channel plays in the emergence of the gap and, consequently, provide potential solutions. We find that enabling everyone to simultaneously make an initial proposal does not close the earnings gap, if anything, it weakly grows in magnitude. Hiding gender eliminates bias in coalition partner choice, alters bargaining dynamics, and equalizes mean earnings. Finally, allowing for instantly-binding agreements in bargaining closes the gap, not only because mixed-gender coalitions become more stable, but also because women become preferred partners. Our results highlight how the attributes of the negotiation environment interact with gender, and suggest that the design of bargaining institutions can be leveraged to promote gender equity.

JEL Classification: C72, J16, J31

Keywords: multilateral bargaining, gender gap, discrimination, coalitions, laboratory experiment, institutional design

1 Introduction

Over the last three decades, an extensive research agenda in the social sciences has substantially furthered our understanding of gender differences in bilateral bargaining (for comprehensive overviews, see Recalde and Vesterlund (2023), Lozano et al. (2022), and Bowles et al. (2022)). Evidence from empirical and experimental work alike shows that men are more willing to enter and initiate negotiations (Exley et al., 2020) and more likely to ask for better outcomes for themselves (e.g., salaries (Roussille, 2023) or shares of a budget to be split (Eckel et al., 2008; Bilén et al., 2021)). In addition to differences in negotiation strategies, elements such as bias, discrimination, and stereotype-conforming behavior have also contributed to lower negotiated outcomes for women in a variety of settings (Babcock and Laschever, 2009). These insights have contributed to important societal debates on gender inequality in labor market outcomes (Goldin et al., 2017; Blau and Kahn, 2017) and other market transactions, especially by shedding light on potential solutions for the gender wage gap (Leibbrandt and List, 2015). However, within the related, yet more intricate landscape of multilateral negotiations, the role of gender remains a compelling but underexplored dimension: little is known about when (and why) gender differences emerge in case more than two people bargain.

Many important decisions in firms, legislatures, and international organizations are made through multilateral negotiations. Consequently, exploring bargaining behavior with more than two decision-makers has long attracted scholars of multiple disciplines.[1] However, the paucity of studies that consider the gender dimension in multilateral bargaining leaves a substantial vacuum in our understanding of human behavior applicable to a wide range of settings. In a recent study, Baranski, Geraldes, Kovaliukaite, and Tremewan (in press) provide the first evidence of a gender gap in majoritarian bargaining, which arises robustly in two experiments with different samples, especially when women are in the minority. The purpose of this paper, in line with an established tradition in bilateral bargaining, is to investigate the reasons behind the emergence of a gender gap by varying institutional aspects of the negotiation environment in order to isolate potential mechanisms. To our knowledge, there is no preceding work seeking to identify the institutional causes behind the gender gap in multilateral negotiations. And, as we will show, the main forces at play cannot be derived or extrapolated from the existing knowledge on bilateral bargaining. Hence, our current work fills a

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[1]See for example the Baron and Ferejohn (1989) model of legislative bargaining and Eraslan and Evdokimov (2019) for a review of theoretical developments. This model has been the subject of more than 20 experimental investigations (Fréchette et al., 2003; Diermeier and Morton, 2005; Fréchette et al., 2005; Miller and Vanberg, 2013). For a review, see Baranski and Morton (2022). For experiments on unstructured bargaining, see Bolton et al. (2003); Montero et al. (2008); Tremewan and Vanberg (2016); Shinoda and Funaki (2022). Business and management scholars are increasingly interested in the study of multiperson negotiations (Edmondson et al., 2003) because modern firms are largely directed by top management teams (Menz, 2012) and the production of goods and services largely involves teams (Lazear and Shaw, 2007), where negotiations are ubiquitous.

substantial void in our understanding of gender differences in bargaining.

We present the results of a series of laboratory experiments to investigate the possible reasons why men earn more than women in majoritarian negotiations. In our baseline experimental game, groups of two men and one woman must decide on the division of a sum of money through a continuous-time, free-form, bargaining game. A division is binding whenever two members agree for a predefined period of time on a split and do not change their proposals or accept other offers. Subjects are free to negotiate by making offers and counteroffers at any point, and withdraw their support from a given preliminary agreement if they wish to. Our investigation focuses on male majority triads for two reasons. First, this gender composition matches more closely the female under-representation observed in the real-world settings motivating our work[2], and second, Baranski et al. have shown that increasing female representation does not necessarily close the gender gap in earnings in multilateral bargaining. Importantly, we pursue a laboratory experiment because it allows us to observe the entire negotiation process, control the bargaining space (a monetary division that aims to reproduce a setting with conflicting interests), and vary the bargaining institution in ways that are not readily feasible in naturally-occurring bargaining settings (for an exception in a bilateral setting, see Backus et al. (2020)).

Despite the highly stylized and symmetric setting in which bargaining takes place, we find that men earn 16% more than women. Based on the outcomes of negotiations, we observe that the gap arises because women are excluded from coalitions, and not because women receive lower shares of the fund to distribute. This fact, in and of itself, already underscores a key distinction with bilateral settings in which coalition exclusion is not a possibility. Three modes of behavior, first identified in Baranski et al. (in press), emerge as potential reasons for the gap. First, men make opening offers more often than women, increasing their odds of securing a share of the benefits. Interestingly, there is a premium for men making opening offers, but not for women. Second, men prefer to partner with men (i.e. form a coalition and exclude the female member) as revealed by with whom they decide to split the money in opening offers. Third, we find that mixed-gender coalitions (i.e., when a male and female subject are in a temporary agreement that excludes the other male subject) are less stable compared to temporary male-only coalitions, since the latter result in a binding agreement more frequently. As a consequence, women are excluded from the sharing of benefits more often than men.

In the present paper, we designed experimental manipulations to investigate the causal impact of each of the three candidate mechanisms identified in our baseline treatment. First, to eliminate any male advantage derived through opening offers, we consider a variant in which it is compulsory for subjects to submit a proposed split of the money before negotiations start. Second, to eliminate

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[2]In 2023, women represent 22.8% of cabinet members heading ministries, 26.5% of parliament positions, 35.5% of elected members in local deliberative bodies (UN Women, 2023). In 2021, Deloitte (2022) report that women held 19.7% of executive board seats in a sample of 51 countries.

the possibility of gender biases and discrimination, we conduct a treatment identical to the baseline except that gender is concealed. In our third treatment, we allow for the possibility of subjects making offers that can be instantaneously binding with the intention of stabilizing mixed-gender coalitions.

Our hypotheses, which we discuss in detail in Section 3 and develop in light of the existing knowledge on gender differences in bargaining and the results of our baseline treatment, posit that the gender gap in earnings is expected to close in each of these treatments. However, we find that the gender gap does not close in the treatment with a compulsory first offer, if anything, the gap increases from 16% to 27%. Thus, men's willingness to initiate negotiations more often than women, which has been highlighted as a key driver of the gender gap in bilateral bargaining, cannot explain the gap in multilateral negotiations. In our treatment where gender is concealed, the gap all but closes (1.1%). While men are still more likely to make opening offers, no first mover advantage arises, highlighting the gendered nature of the first mover premium. Importantly, absent gender information, women are not excluded from coalitions as occurs in the baseline. Finally, in the optional binding offer treatment, the gender gap in earnings weakly reverses to -7.2% (though it is not statistically significant), reflecting the key role that bargaining dynamics play in the emergence of the gender gap. Surprisingly, male-female coalitions become more stable not only in binding offers but also when mixed-gender coalitions form through non-binding offers.[3]

We provide the first evidence that men and women have identical abilities in multilateral bargaining, as demonstrated by the treatment where gender information is absent. This finding indicates that a necessary condition for the gender gap in earnings observed in the baseline is the awareness of own and others' gender. Notably, the failure of the compulsory first offer treatment shows that a *lean in* (Sandberg, 2013) type of intervention can also backfire in multilateral bargaining as it has been shown to occur in bilateral bargaining (Exley et al., 2020). Our treatment in which both binding and non-binding offers are possible demonstrates how the attributes of the negotiation environment interact with gender and how institutions can shape dynamics and outcomes.

Our research endeavor has had the primary goal of qualifying the effect of three plausible mechanisms underlying the gender gap in its emergence. However, our findings may also carry practical applications, as we discuss in Section 6.2. The compulsory first offer treatment appears to be a simple and implementable fix in formal bargaining settings, where an institutional leader or chairperson can collect proposals prior to opening the floor for negotiations. However, our results offer words of caution because this type of intervention may backfire. With respect to the concealment of gender,

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[3]To understand why binding offers help close the gap, one should mention that in the baseline treatment, mixed-gender coalitions dissolve at higher rates than male-male coalitions. Hence, men are more likely to be part of a final agreement coalition than women. Allowing for binding offers helps stabilize preliminary coalitions, which we conjectured would favor women and is confirmed in our data.

this is often impractical in many real-life situations (see, e.g., Goldin and Rouse (2000) for a notable exception). However, given the growing use of online platforms, electronic means of communication, and computer mediated interactions, there is scope to enact policies aimed at reducing biases and stereotype conforming behavior, and our findings suggest that this can favor women.

Institutional designers may find it difficult to externally manipulate the availability of binding or non-binding offers in bargaining settings, but they may be able to nudge the parties or help shift behavioral norms that foster coalition stability. The possibility of making both binding or non-binding offers may vary by setting. For example, in the negotiations to form coalition governments in parliamentary democracies, elected parliament members are free to negotiate and renege on temporary agreements. However, reneging may carry strong reputation costs, or may even have legal consequences in some settings.

Our study contributes to an important literature on interventions addressing gender gaps in different contexts such as, for instance, female leadership (Chattopadhyay and Duflo, 2004), sharing ideas (Coffman, 2014), and education choices (Patnaik et al., 2023). More specifically, a key inspiration for our study is the active debate favoring interventions à la "fix the institution" over interventions à la "fix the women" (Apicella et al., 2017; He et al., 2021). Our work also contributes to a recent and growing literature that has advanced our understanding of the *back-and-forth* process of negotiations in the laboratory (Gächter and Riedl, 2005; Bochet et al., 2020; Kamm and Siegenthaler, 2022) and the field (Backus et al., 2020) by identifying coalition instability as a key driver of the gender gap in multilateral negotiations.

The remainder of this article is organized as follows. In Section 2, we describe our experimental treatments and procedures. In Section 3, we lay out and justify our hypotheses. The results concerning the differences in earnings in each of our treatments are presented in Section 4. Next, we investigate the role of different channels in Section 5. We discuss the robustness of our findings and their policy relevance in Section 6. Section 7 concludes.

2   Experimental Design

2.1   The Baseline Bargaining Game

We first explain the details of the *Baseline* treatment. Triads consisting of two male and one female subjects are formed at random with the objective of dividing a fund consisting of 12 experimental currency units (ECUs). At the beginning of the negotiations, the 12 ECUs are equal to 36 euros, but with each second that passes without agreement, the value of the fund decreases by 24 cents.

A silhouette indicating the gender of each member of the committee was displayed. This is a

subtle and commonly used way of conveying gender to subjects in experiments.The bargaining interactions are fully computerized, without communication or visual interaction between subjects. The software interface was programmed in zTree (Fischbacher, 2007).

Bargaining occurs in continuous time as follows. Subjects are free to make proposals on how to divide the fund at any point in time as soon as the clock starts ticking. Each subject can make at most one proposal at a time and all current offers are publicly displayed. Subjects can also withdraw their proposals freely.

When two or more subjects make identical proposals, a *temporary agreement* forms that is not yet binding. Subjects are free to make counteroffers, accept others' counteroffers, or withdraw their current offer during a temporary agreement. If subjects remain in agreement for 10 seconds, which we refer to hereafter as the *ratification period*, the agreement becomes binding and bargaining ends. During the ratification period, the value of the fund continues to decrease at the same rate of 24 cents per second.

2.2 Treatments

We now proceed to explain the other three treatments in this study (see Panel A of Table 1 for a summary), which are designed with the intention of closing the gender gap. Here we present the details of the bargaining protocol and provide the justification and hypotheses in Section 3.

In the *Compulsory First Offer* treatment, we require all subjects to submit an initial proposal on the split of the ECUs prior to the start of the negotiations. The first offers are revealed simultaneously only when every group member has submitted their offer. Once revealed, the first offers are displayed for 10 seconds. During this initial display, no one can make counteroffers or withdraw their first offer, and the fund does not shrink. Afterward, the game continues exactly as in the *Baseline* treatment.

In the *No Gender* treatment, the gender of the participants is not revealed. However, the gender composition remains the same. All else is identical to the *Baseline* treatment.

In the *Optional Binding* treatment, subjects have the option of making *binding offers*. Specifically, if two subjects propose the same split in a binding offer, an agreement is reached, and no further offers can be made. The ratification period of 10 seconds still holds to maintain the payoff equivalence between binding and non-binding offers.[4] If two players propose the same split, but only one of them makes a binding offer, then any player to the agreement is free to withdraw their offers. Thus, the binding offer is not a commitment unless at least one other subject is making the same commitment. Importantly, if two subjects are in a temporary agreement, they can switch to binding

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[4]For example, if 5 seconds after the start of the bargaining process, two participants decide to equally share the fund (that is, 6 points each) via binding offers, each would receive €16.20 =[36 - 0.24*(5 + 10)]*6/12

offers at any moment during the ratification period. The nature of the offer a subject makes, binding or not, as well as the offer, is public information.

The Optional Binding treatment increases subjects' action set, which can potentially increase the complexity of bargaining. We sought to minimize any differences with the baseline in the design of the experimental interface. Binding offers are made by clicking with the right mouse button, non-binding with the left. Binding and non-binding offers appear on the simplex as diamonds and circles, respectively.[5]

2.3 Session Details

In each session, prior to the start of the instructions, a demographic survey was conducted asking subjects their gender, among several other questions.[6] The gender silhouettes displayed during the bargaining game were assigned based on the gender of the subjects reported in the laboratory's subject database. The assigned gender always coincided with the subjects' answers to the introductory survey.[7] Importantly, the word "gender" was otherwise never mentioned in the instructions.

Subjects received extensive training to become familiar with the interface and were unable to proceed until they demonstrated proficiency by completing a series of exercises involving every aspect of the software. The bargaining game was repeated 12 times with random rematching of participants with one of the repetitions being selected for payment at the end of the experiment. In what follows, we denote each repetition as a *period* or *game* interchangeably. A show-up fee of 5 euros was offered to subjects for participating on top of their earnings.

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[5]The data show that there is no difference between treatments in the time to agreement, supporting our attempts to mitigate efficiency changes induced by our implementations of the bargaining game.

[6]This procedure serves to camouflage the gender question, thus reducing the chance of an experimenter demand effect (Zizzo, 2010)

[7]A likely explanation for not having any mismatch among the participants in our experiment is because invitations invitations were sent only to subjects who had registered as a woman or as a man.

Table 1: Experimental Design and Sample

	Treatment			
	Baseline	Compulsory First Offer	No Gender	Optional Binding
A. Design details				
Is it compulsory to make an opening offer?	No	Yes	No	No
Are gender silhouettes displayed?	Yes	Yes	No	Yes
Can binding proposals be made?	No	No	No	Yes
B. Sample details				
Number of subjects	150	96	96	90
Number of matching groups[1]	14	8	8	10
Number of agreements[2]	600	384	384	360

[1] Within a session, subjects were randomly allocated to matching groups, of size 9 or 12.

[2] An agreement refers to a bargaining outcome (there are no disagreements in our sample). It is the number of periods times the number of subjects divided by 3.

2.4 Sample

The experiments were conducted at the Laboratory for Research in Behavioural Experimental Economics (LINEEX) at the University of Valencia, Spain. In total, 432 subjects participated (each only in one treatment). The Baseline treatment includes data from Baranski et al. (in press) and 54 additional subjects (6 matching groups more), which we combine in our analysis. Details on the number of subjects per treatment, the number of independent matching groups, and the total number of games can be found in Panel B of Table 1.

3 Hypotheses

In this section, we motivate and state our main hypotheses to be tested. Our goal is to provide a rationale for each treatment that we have conducted and offer our informed conjecture of the expected gender gap in earnings.

First and foremost, in our Baseline treatment, we replicate the gender gap as reported in Baranski et al. (in press). As we will report in detail in the results section, we identify three channels that may contribute to men earning more than women, which have motivated our experimental treatments. Here, we briefly present the findings, leaving quantitative and statistical analysis for the Results section.

The first channel is that men are more likely than women to make the opening offer. Importantly, when men propose first, on average they end with a share that is larger than the average surplus (i.e., 1/3), but women do not. One possible reason is mechanical, simply that being the first proposer

makes one more likely to be part of an agreement. A second possibility is that proposing first can backfire for women because this action may be perceived as going against stereotypically expected female behavior. Previous studies suggest that the gender gap in bilateral negotiations is affected by stereotypes as the gap may increase when women deviate from gender norms (Kray et al., 2002). Furthermore, Bowles et al. (2007) provide evidence suggesting that gender differences in the willingness to initiate negotiations may be explained by women suffering backlash for doing so. With our Compulsory First Offer treatment, we aim to preclude women from being penalized because first offers can no longer be interpreted as the breaking of a stereotype. Hence, we conjecture that:

H1: The gender gap in earnings will close in the Compulsory First Offer treatment.

The second possible channel for the gender gap is that men tend to partner more with other men, both in the opening offers and in final agreements as a result of the bargaining process. By concealing gender, we preclude subjects by acting in gender-biased manners. Because men cannot target other men as partners in coalitions, our second hypothesis is:

H2: The gender gap in earnings will close in the No Gender treatment.

A third channel we identify in the Baseline treatment is that, when two males form a coalition and reach an interim agreement, men are more likely to end in agreement compared to when a male and a female form an interim coalition. Thus, in the Optional Binding treatment, we allow for coalitions to become more stable. We conjecture that the possibility of making binding offers will help stabilize mixed-gender coalitions. Therefore, our third hypothesis is:

H3: The gender gap in earnings will close in the Optional Binding treatment.

4   Gender Differences in Earnings

In this section, we first present the results concerning average earnings in the bargaining game, which is our main variable of interest.Throughout the analysis, we compare each treatment with the baseline only. In regression analyses, standard errors are clustered at the matching group level. For non-parametric tests, we take the matching group average of the variable in question as an independent observation. All our tests are two-sided, unless otherwise specified. WSR stands for Wilcoxon Signed Rank tests, and MW stands for Mann Whitney tests.

Figure 1 shows the mean difference between male and female earnings as a proportion of the mean female earnings in each treatment. In the Baseline treatment, male subjects earn 15.8% more than females ($p = 0.013$, WSR). Requiring subjects to submit an opening offer leads to a 27% gender gap ($p = 0.039$, WSR). The concealment of gender silhouettes virtually eliminates the gap (1.1%

Figure 1: Gender Gap
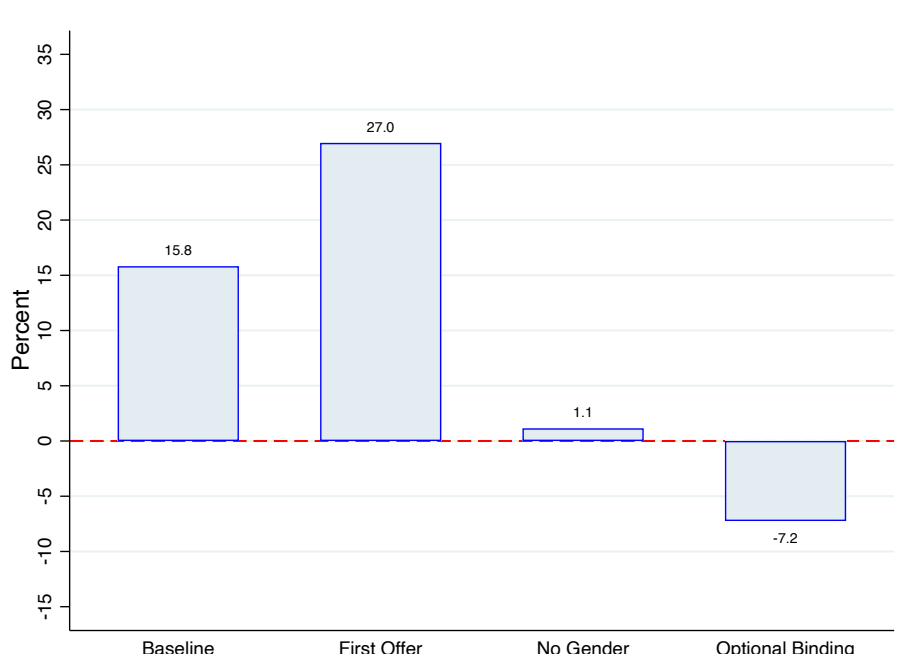
Notes: The gender gap is calculated as the treatment level mean difference between male and female earnings divided by the mean female share.

difference, $p = 0.945$ WSR). Finally, the mean gender gap weakly reverses in favor of women in the Optional Binding treatment but the earnings difference is not statistically significant at conventional levels ($p = 0.322$, WSR). Linear regression analyses using each game as the unit of observation, and clustering standard errors are the matching group level, lead to the same conclusions (see Table C1 and Figure C2 in the Appendix).

Table 2: Average Earnings (in Euros)

Treatment	Pooled	Males	Females	Gender Gap (%)	p-value
Baseline	10.65	11.16	9.63	15.8%**	0.013
Compulsory First Offer	10.62	11.43	9.00	27.0%**	0.039
No Gender	10.54	10.58	10.46	1.1%	0.945
Optional Binding	10.65	10.38	11.19	- 7.2%	0.322

The *p*-values are based on Wilcoxon signed rank tests comparing within-matching group gender differences in averages. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Result 1. *In the Baseline treatment, men earn 15.8% more than women. The gender gap in earnings favoring men is also present in the treatment with a compulsory first offer. The gap closes in both the treatment with concealed gender and the treatment when subjects have the option of making binding offers.*

Importantly, we find no difference across treatments in total payoffs, with subjects realizing

88.5% of the potential surplus (i.e., there was no significant difference in the time it took to reach a final agreement).[8] As such, our treatment manipulations and the ensuing effects on the gender gap have no effect on efficiency. We investigate whether personal characteristics, other than gender, correlate with earnings in Section 6.1.

5 Mechanisms explaining the Differences in Earnings

To study the mechanisms we first describe the overall split of the benefits, the formation of coalitions, and their gender composition in Subsection 5.1. In Subsection 5.2, we analyze gender differences in willingness to propose first. In Subsection 5.3 we explore the potential bias in male first movers' coalition partner choice. Subsection 5.4 presents the results for the dynamics of the bargaining process, focusing on the stability of coalitions and counteroffers by excluded members.

5.1 Coalitions

In what follows, we investigate the formation of coalitions, their gender composition, and the split of the 12 ECUs within them. We denote a split of the fund that assigns a positive share to two members only as a minimum winning coalition (MWC). We refer to a three-way split of the fund as a grand coalition (GC). We seek to understand whether differences in the gender gap in earnings across our treatments are the result of differences in the likelihood of inclusion in coalitions, differences in the split of the fund between members of a coalition, or a combination of both.

Panel A of Figure 2 shows that MWCs are the modal type of agreement in all treatments. They account for approximately 77% of our sample (pooling all treatments), with no significant differences between the baseline and any of the treatments (see regression results in Table C2).

However, we find important differences in the gender composition of MWCs, which helps further characterize the gender gap in earnings. As shown in Panel B of Figure 2, mixed gender coalitions represent 59% and 55% of all MWCs in the Baseline and Compulsory First Offer treatments. In both of these cases, the proportion of mixed gender MWCs is significantly different from 2/3 ($p = 0.003$ and $p = 0.009$, respectively, derived from Wald tests based on regression results in Table C3), which is the proportion that would arise under a perfectly random composition (see dashed line in Panel B of 2). In contrast, mixed-gender MWCs obtain 65% of the time in the No Gender treatment and 70% in the Optional Binding treatment, which are statistically indistinguishable from the perfect randomization benchmark ($p = 0.253$ and $p = 0.306$, respectively).

In addition to being underrepresented in coalitions in the Baseline and Compulsory First Offer

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[8]We conducted a Kruskal-Wallis test using matching group averages and obtain $p = 0.403$, meaning we cannot reject the hypothesis that mean total payoffs are drawn from a common distribution. Individual MW tests comparing each treatment with the baseline also leads to the same conclusion.

Figure 2: Minimum Winning Coalitions
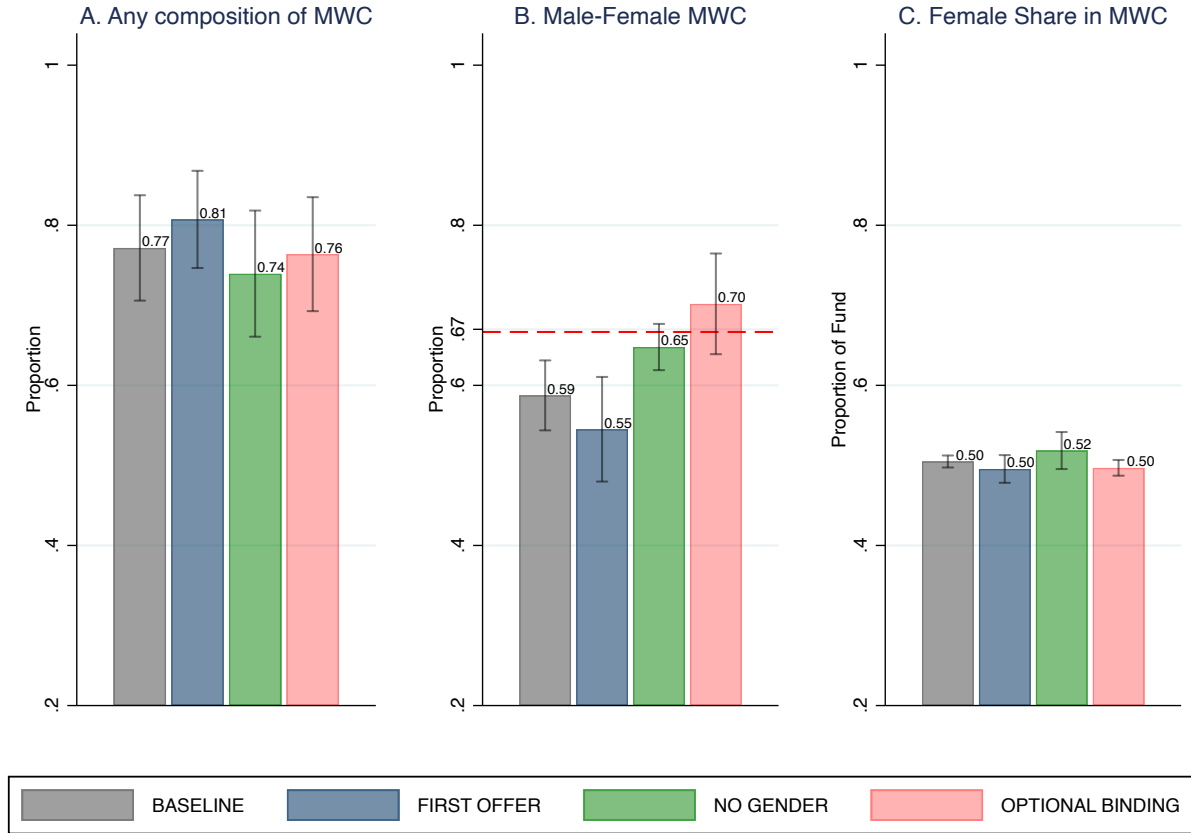
Notes: Whiskers represent the 95% confidence intervals clustering standard errors at the matching group level. Exact values are displayed above the bars. The dashed line in Panel B represents the proportion of mixed-gender MWCs that would arise under perfect randomization of partner choices. Only final agreements are considered in the analysis.

treatments, do women also receive a smaller share when included in an MWC? As shown in panel C of Figure 2, there are no gender differences in the share of the fund received conditional on inclusion in the coalition in any of our treatments.[9] Hence, the gap in earnings stems from coalition inclusion differentials and not from payoff differentials within coalitions.

Result 2. *With respect to the formation of coalitions, we find that:*

1. *Minimum winning coalitions are the modal split in all treatments.*

2. *There is a gender gap in coalition inclusion in the Baseline and Compulsory First Offer treatments, with women being excluded more than would occur at random. The gap in inclusion closes in the No Gender and the Optional Binding treatments.*

3. *In all treatments, men and women receive, on average, equal shares, conditional on coalition*

[9]For regression analyses and statistical tests see Table C4.

inclusion.

We also investigated the distribution of the fund in grand coalitions and found that the mean share of women is not significantly different than 1/3. Therefore, in general, the evidence suggests that to understand the origins of the gender gap in earnings, we must focus on the formation and dissolution of MWCs. In the upcoming analyses, we investigate first movers and their target partners in Section 5.2 and the stability of initial MWCs in Section 5.4.

In this section we investigate coalition formation and its gender composition in Subsection 5.1. In Subsection 5.2, we analyze gender differences in willingness to propose first. In as well as potential bias in male first movers' coalition partner choice. Subsection 5.4 presents the results for the dynamics of the bargaining process, focusing on the stability of coalitions and counteroffers by excluded members.

5.2   Mechanism 1: Who makes opening offers?

In this subsection, we focus on the three treatments where the first proposal is *endogenous* (recall that in the Compulsory First Offer treatment, everyone must submit an opening offer).

Figure 3: Proportion of Opening Offers by Males
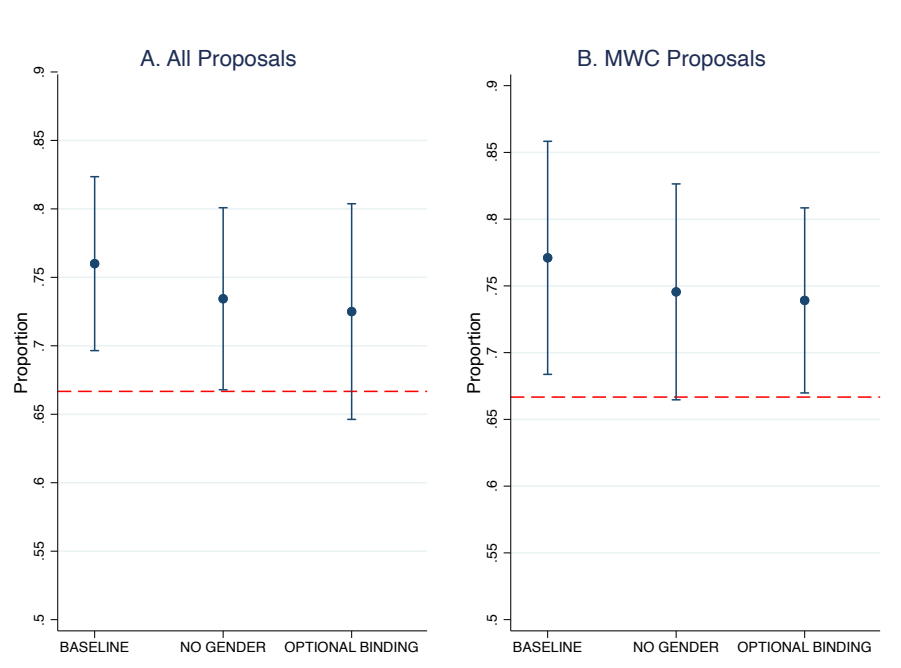
Notes: Whiskers represent the 95% confidence intervals clustering standard errors at the matching group level. The dashed line at 2/3 represents the proportion of opening offers expected if men and women proposed first at equal rates.

Figure 3 shows the proportion of opening offers made by males. In the Baseline, No Gender, and Optional Binding treatments, women are less likely to make the opening offer than men. Male sub-

jects propose first in approximately 76% of all games, with no significant treatment differences. In the Baseline and No Gender treatments, the proportion of male first movers is statistically greater than 2/3, which is the proportion expected if there were no gender differences in willingness to propose ($p = 0.005$ and $p = 0.046$, respectively). In the Optional Binding treatment, the percentage of games in which males make the opening offer is 72.5, which while short of reaching statistical significance ($p = 0.141$), is in line with the previous treatments. These results also hold when conditioning on MWC proposals.[10]

Result 3. *In every treatment with an endogenous first mover, men are more likely than women to make opening offers. Because the gender gap remains without an endogenous first mover in the Compulsory First Offer treatment, and vanishes in the No Gender and Optional Binding treatments, we conclude that men's propensity to make opening offers is not a necessary condition for the emergence of the gender gap in earnings.*

We now turn to investigating whether making the opening offer confers an advantage. The results from the Baseline show that first movers end with 35.2% in the agreed proposal while non-first movers end with 32.4% ($p = 0.117$). A similar pattern arises in the Optional Binding treatment (32% vs. 36%, $p = 0.028$). We find virtually no opening offer advantage in the No Gender treatment, with first proposers earning 33.9% and the others earning 33.1% ($p = 0.634$). [11]

Figure 4: Proportion of the Fund in Agreed Allocation[1] by Subjects Making the Opening Offers
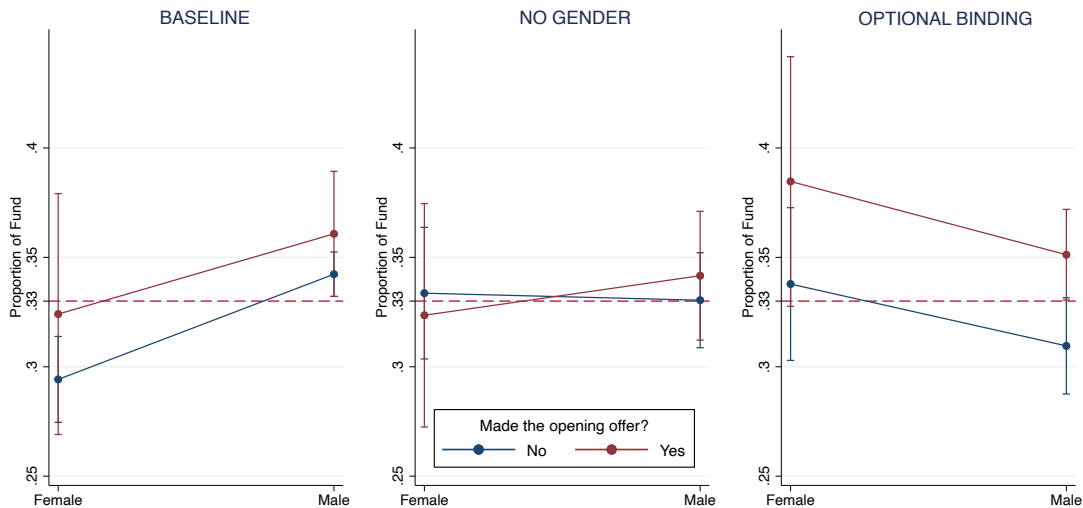
Notes: [1] This refers to the share with which the first mover ends in the agreement reached. It is not necessarily the share that the first mover claims in her proposal, as the first proposal need not be implemented. Whiskers represent the 95% confidence intervals clustering standard errors at the matching group level. For regression results see Table C8.

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[10]The p-values reported here correspond to Wald tests based on the regression results presented in Table C5.

[11]See Table C6.

Are there gender differences in the first-mover advantage? Figure 4 shows the mean share of the fund received by each gender for those who made and did not make the opening offers. In the Baseline treatment, we find that men earn more than 1/3 of the fund when proposing first ($p = 0.058$) while women do not ($p = 0.772$). In the Optional Binding treatment, both men and women first movers earn more than 1/3 ($p = 0.083$ and $p = 0.072$). Interestingly, when gender is not revealed, the first mover advantage disappears in the aggregate and by gender.

Result 4. *The first-mover advantage arises only in treatments where gender is revealed. The first-mover advantage is small when it exists, and thus cannot explain the magnitude and direction of the gender gap within each treatment.*

5.3 Mechanism 2: Is there bias in the choice of coalition partners?

We now investigate whether men display bias in their opening offers.[12] For this analysis, we also include all opening offers from the Compulsory First Offer treatment. We focus on MWC proposals because we can uniquely identify the target of the offer, that is, who is receiving a positive share besides the proposer. Figure 5 shows the proportion of opening offers by male subjects targeting the other male in the group.

We find that, when forming an MWC, men in the Baseline treatment partner with each other 55% percent of the time, thus exhibiting a small but significant bias ($p = 0.063$). The bias shrinks in the Compulsory First Offer and No Gender treatments, and we cannot reject the null hypotheses of perfect randomization in partner choice in these two treatments ($p = 0.533$ and $p = 0.529$, respectively). Interestingly, women become the preferred coalition partner 55% of the time in the Optional Binding treatment ($p = 0.120$). The 10 p.p. difference between the Baseline and Optional Binding treatments is significant ($p = 0.010$. See the regression results in Table C9).

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[12]Because women can only propose to men in these triads, we cannot study their bias. See Baranski et al. (in press) where it is reported that women do not display bias against men when in majority.

Figure 5: Proportion of Opening Offers by Males Inviting the Other Male into a Coalition
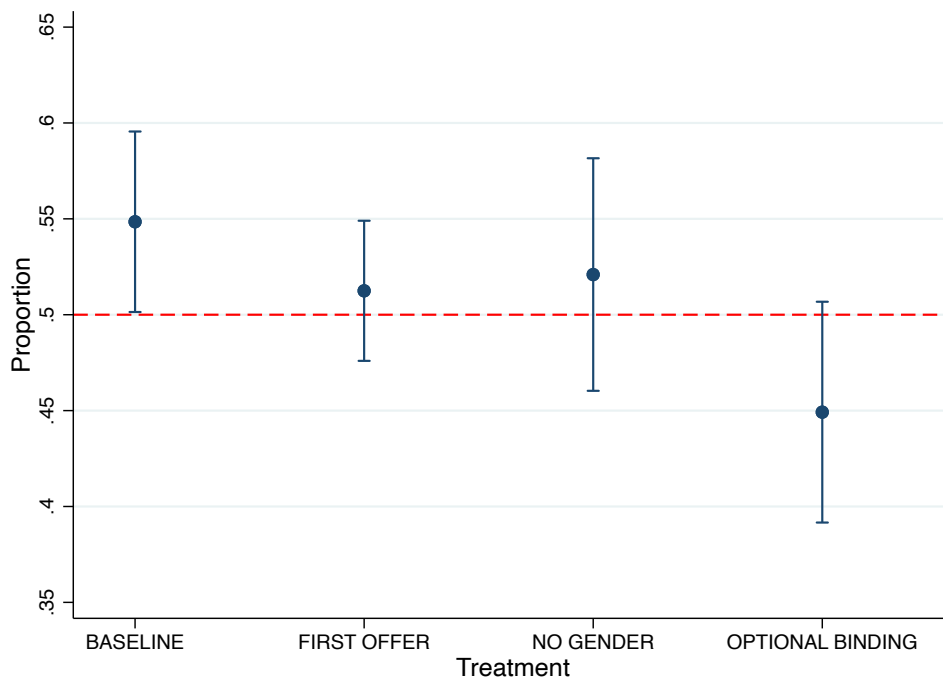
Notes: Whiskers represent the 95% confidence intervals clustering standard errors at the matching group level. The dashed line at 0.5 represents the expected proportion of mixed-gender coalitions if males randomized over their partner choice in opening offers. For the regression results, see Table C9.

Result 5. *In the Baseline treatment, male first movers display bias in their opening offers by partnering with males more often than females. The bias fades in the Compulsory First Offer and No Gender treatments and weakly reverses in favor of women in the Optional Binding treatment.*

In the Subsection 5.5, which we defer for later to maintain the focus of the analysis on the three mechanisms we sought out to test, we analyze whether men's preference in favor of partnering with males is present in both binding and non-binding first offers. Quite surprisingly, non-binding offers are twice as popular as binding ones.

5.4 Mechanism 3: Coalition Stability and Dynamics

The bargaining dynamics of an unstructured bargaining game such as the one we have implemented are challenging to analyze due to the myriad of possible sequences of offers, counteroffers, and interim agreements. The difficulty in analyzing experimental games in continuous time is not unique to our setting.[13] One common approach is to focus on relevant events or outcomes at certain points in time. In that spirit, we focus on one *summary* variable that captures the essence of

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[13]See Friedman et al. (2015) for continuous-time oligopoly games and Cason et al. (2014) who study mixing in a rock-paper-scissors game.

bargaining dynamics, that is, the stability of initial coalitions. Ultimately, we are interested in explaining why agreements consisting of a split between two male subjects are over-represented in the Baseline and Compulsory First Offer treatments while male-female splits are over-represented in the Optional Binding Treatment.[14]

Figure 6: Proportion of Initial Coalitions Resulting in Final Agreement
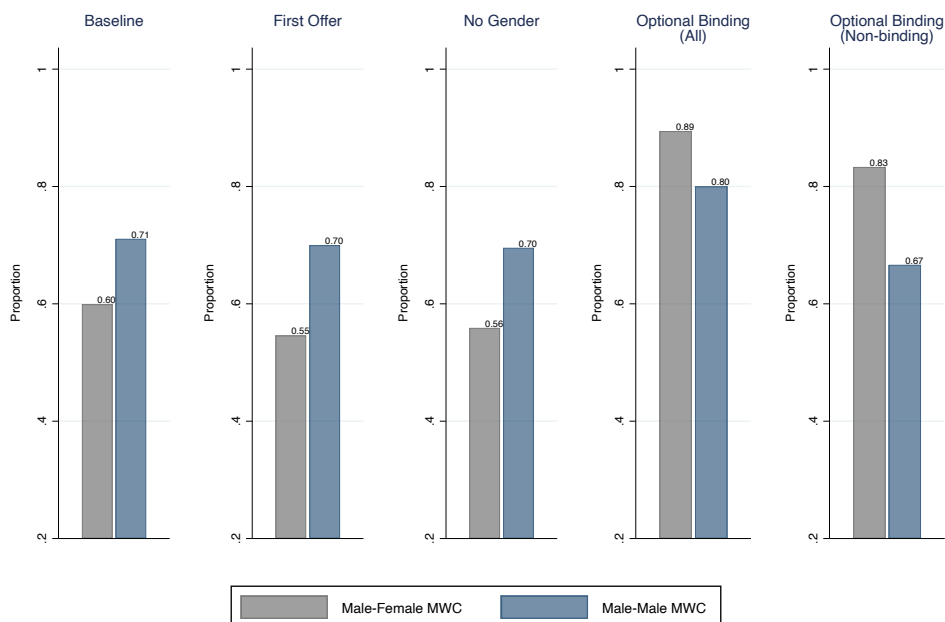
Notes: This figure counts an initial coalition as resulting in agreement also when coalition partners renegotiate the initial split between themselves and then remain in agreement. Similar results hold when excluding renegotiation. See Table C14.

To investigate the stability of initial coalitions, we will focus on the fate of the first temporary agreement reached in a group. We restrict attention to the MWCs because, as explained earlier, these are the modal agreements and it is clear who the left out party is. Figure 6 shows the proportion of initial MWCs that result in a final and binding agreement, by the gender composition of the coalition.

In the Baseline treatment, initial male-male coalitions result in final agreements 71% of the time while male-female coalitions only 60%. Probit regression analysis (see Table C11) shows that this difference of 11.2 p.p. is significant ($p = 0.012$). A similar pattern emerges in the Compulsory First Offer (15.4 p.p., $p = 0.017$) and the No-Gender treatment (13.7 p.p., $p = 0.019$).

In the Optional Binding treatment, there is an overall increase in stability of initial agreements. Compared to the Baseline treatment, an initial MWC agreement is 22.3 p.p. more likely to bind (64.1% vs 86.4%, $p < 0.001$). The same is true when focusing on initial agreements that were not

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[14]For completeness, the interested reader will find in the Online Appendix an analysis of counteroffers following an initial MWC agreements (Tables C15 and C16). It should be clear to the reader that, given the free-form nature of our bargaining game, the number of possible paths a specific game can take is quite large.

binding from the onset (64.1% vs. 77.5%, $p = 0.022$).[15] The stability of the different gender composition of MWCs is reversed compared to all other treatments: male-male coalitions end in agreement 80% of the time while male-female coalitions in 89% ($p = 0.075$). The difference magnifies when one restricts attention to initial interim agreements that were not binding from the onset (67% vs 83%, $p = 0.032$).

Result 6. *When only non-binding offers are possible, male-male coalitions are significantly more stable and likely to end in agreement than male-female coalitions. When binding offers are possible, male-female coalitions are more stable than male-male coalitions.*

5.5 On the Nature of Binding and Non-binding Opening Offers when Binding Offers are Possible

The reasons why women weakly outperform men in bargaining warrants closer inspection. In this subsection, we investigate the type of first offers made in the Optional Binding treatment (i.e., binding vs. non-binding). To compare the types of offers, we analyze three aspects: the gender of the first mover, the distributional properties (i.e., MWCs or grand coalitions), and the gender composition of coalitions. Table C13 shows the percentage and frequency of binding offers in Panel A, by gender. Overall, first movers make binding offers 34.4% of the time, with no difference between male behavior (34.9%) and female behavior (33.3%) ($p = 0.897$, see regression in Table C12 column 1).

In Figure 7, we show the percentage of binding and non-binding opening offers by type of split and the composition of the coalition, for each gender. Our goal is to understand if men and women make use of binding offers in different manners and whether the type of splits (MWCs or GCs) vary between the Optional Binding and Baseline treatments. When females make opening offers, regardless of their binding status, 66.7% of the time these are mixed-gender MWC proposals. This is quite similar to the proportion of observed under the Baseline treatment (69%). When men make opening offers

As noted earlier, men target women more in their opening offers in the Optional Binding treatment but the reverse is true in the Baseline. What we highlight here is that the preference for partnering with women in the Optional Binding treatment appears wider when non-binding offers are made: Women are preferred as coalition partners for non-binding offers (38.8% women vs 30% men as coalition partner) and for binding offers (40.7% vs 36.3%). As such, our findings suggest that the mere availability of binding proposals in subjects' choice sets can affect the behavior of those making non-binding proposals.

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[15]For probit regression results see Table C10.

Figure 7: Binding and Non Binding Offers by Type of Split and Gender
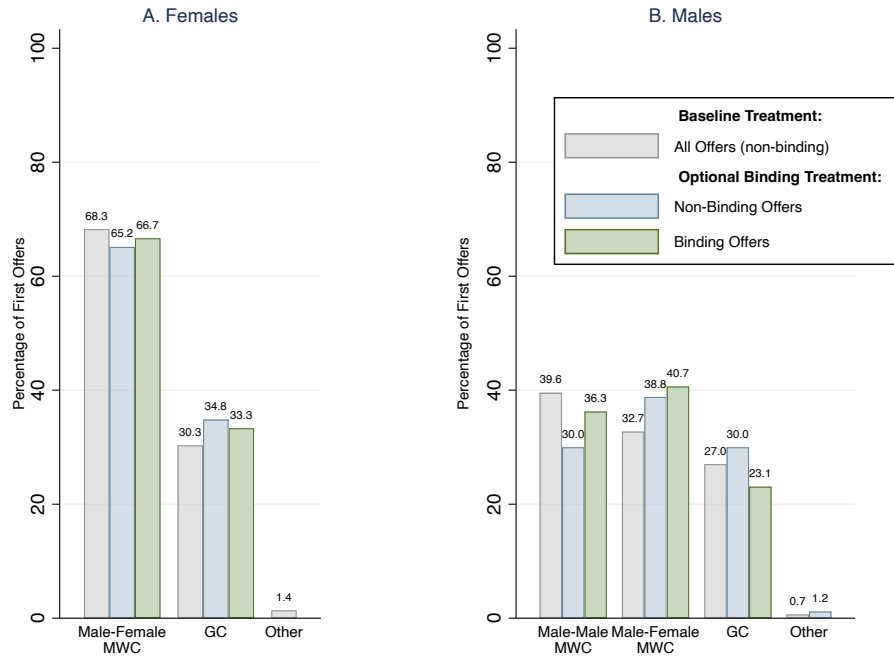
Notes: This figure shows the percentage of opening offers that were binding / non-binding for each type of split. For the frequency and percentage of binding and non-binding offers see Panel B of Table C13.

Result 7. *Non-binding opening offers are more prevalent than binding offers (65.6% vs 34.4%), with no significant difference in their use between men and women in opening offers. Importantly, men's preference for partnering with women in MWCs is present in both binding and non-binding offers.*

6   Discussion

6.1   Personal Characteristics

To better understand how the gender gap in earnings is generated in different treatments, we also investigate the extent to which earnings can be explained by differences in individual characteristics (Gillen and Yariv, 2019; Van Veldhuizen, 2022).

In Table 3, we report linear regression results of the points earned in each treatment as a function of gender, self-reported risk preferences, altruism, cognitive ability (using the three-question cognitive reflection test - CRT), enjoyment derived from competing, enjoyment derived from winning, and self-reported susceptibility to time pressure. We observe that the gender effects remain consistent with the findings of the gender gap in each treatment.

Importantly, there is a positive and consistent effect of the CRT score on earnings, especially in

Table 3: OLS of Points Earned on Individual Characteristics

	Baseline	First Offer	No gender	Optional Binding
Male	0.452***	0.769***	-0.091	-0.446**
	(0.00)	(0.00)	(0.71)	(0.02)
Risk	0.027	0.036	-0.019	0.007
	(0.41)	(0.42)	(0.62)	(0.84)
Altruism	-0.092**	0.073*	-0.032	-0.015
	(0.01)	(0.09)	(0.65)	(0.70)
CRT score	0.100	0.143*	0.089	0.242***
	(0.09)	(0.10)	(0.38)	(0.00)
Enjoys Competing	-0.054	-0.015	0.037	-0.005
	(0.25)	(0.85)	(0.51)	(0.94)
Enjoys Winning	0.046	-0.002	0.038	-0.048
	(0.28)	(0.98)	(0.54)	(0.35)
Time Pressure	-0.034	-0.084	-0.010	-0.048
	(0.31)	(0.10)	(0.85)	(0.24)
Constant	4.200***	2.954***	3.960***	4.477***
	(0.00)	(0.00)	(0.00)	(0.00)
N	1800	1152	1152	1080

Risk and Altruism are self-reported attitudes on a scale from 0 (low) to 10 (high). CRT refers to the number of correct answers (0-3) to the standard Cognitive Reflection Task questions. Enjoys Competing and Enjoys Winning variables are self-reported willingness to compete and win respectively on a scale 1 (strongly disagree) - 7 (strongly agree). Standard errors in parentheses clustered at the subject level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

treatments with higher strategic complexity: Compulsory First Offer and Optional Binding. This suggests that additional bargaining protocol features may lead to better performance for those who are less likely to give in to intuitive reasoning biases. This is consistent with evidence from other games where those scoring higher in the CRT reflect a higher ability to think strategically (Brañas-Garza et al., 2012). See Brañas-Garza et al. (2019) for a review.

6.2 Implications for Institutional Design

In a broader context, the identification of effective interventions to combat outcome inequities is an important step, but implementing such interventions often still poses a significant challenge for social scientists, policymakers, and leaders within organizations. Although our research project has the modest intention of investigating the causes of the gender gap in majoritarian bargaining by means of a simple bargaining game, we believe that our findings can offer both words of caution and insights into desirable characteristics of real-world environments that may foster equality. Thus far, to the best of our knowledge, the extant literature has focused on *bilateral bargaining* settings. Next, we discuss the lessons learned from each treatment we have conducted.

First and foremost, the gender gap in earnings is not driven by differences in negotiation ability,

as demonstrated in the treatment where gender is hidden. Therefore, offering training or more invasive interventions to change women's bargaining tactics are unlikely to be effective. As proof, we point to our failed attempt to close the gender gap in earnings by requiring all subjects to submit an opening offer. The fact that the gender gap remains (and even weakly increases) is in line with previous literature reporting on the detrimental effects of forcing women to *lean in*. If anything, our results are consistent with women in the baseline treatment already acting in a way that is optimal for them given the environmental constraints (i.e., formal and informal institutions, see Bowles et al. (2007) and Recalde and Vesterlund (2023) for a discussion). Therefore, we believe that our findings from the Compulsory First Offer treatment serve as a cautionary note against policies that aim to promote equality through *lean in* approaches, as they can potentially backfire.

The concealment of gender is a way to mitigate biases that may arise in negotiations and to reduce the effect of stereotypes on expected behavior. Although concealing one's identity can be impossible in face-to-face interactions, bargaining settings in which the identity of the bargainers is concealed are becoming increasingly popular. For instance, computer-mediated negotiations, through virtual meeting rooms, electronic mail, and messaging applications are burgeoning and will likely continue to increase in the coming years. Of particular interest is the fact that there is no advantage for subjects making opening offers absent gender information, while the advantage appears positive and stronger for men when gender is known, which shows that displaying gender or gender-identifying labels can alter negotiation dynamics in ways that harm women and favor men. This is consistent with the social psychology literature that reports on how revealing gender in negotiations can evoke stereotypes (Matheson, 1991; Babcock and Laschever, 2009), a literature that has primarily focused on bilateral settings.

Our motivation for having incorporated the possibility of making binding offers in our bargaining setting is that in many real-life relevant settings, there may exist large reputational or moral costs for backing out from a temporary agreement. Jumping from one coalition to another, or breaking away to offer a new coalition to another party, can be interpreted as not keeping one's word or disloyal behavior. One potential reason for the increase in the stability of coalitions is therefore that withdrawing from initial coalitions becomes a less socially desirable action in the presence of the option to make binding offers. If so, a relevant implication would be that leaders and institutional designers within organizations where negotiations take place can nudge bargainers not to backpedal on interim agreements, for example. Testing in the field whether a simple intervention aimed at increasing the inappropriateness of reneging on interim agreements can help close the gender gap is outside the purview of our study. Such future research avenue is important to shed further light concerning the effectiveness of the Optional Binding treatment.

7 Conclusion

We leverage a laboratory bargaining environment where decisions are reached by majority rule to investigate when and why a gender gap emerges. First and foremost, the gap can be attributed to the exclusion of women from coalitions, and not to differences in shares within coalitions. Therefore, it becomes crucial to understand why women are largely unrepresented in coalition agreements.

In our first intervention to close the gap, we give men and women an equal opportunity to make opening offers. Our goal was to eliminate any advantage that might emanate from endogenous first movers or backlash that women may suffer from doing so. This treatment is ineffective in closing the gap, which indicates that men making an opening offer more often is not a key determinant of the gap. Further corroborating that men being more likely to be the first mover is not a necessary condition for the gender gap in earnings is the finding that in both the No Gender and Optional Binding treatments, where men are still more likely to make opening offers, but the gender gap disappears. Relating our findings to existent knowledge from bilateral settings, we note that women's reduced propensity to initiate negotiations as a key driver of the gender gap in salary negotiations does not translate to a sizable bargaining disadvantage in majoritarian bargaining.

In our second intervention, we conceal gender to prevent men from partnering with men more often than with women, as we find in our baseline treatment. Given that the gender gap in earnings closes in this treatment, one may be tempted to conclude that biases in bargaining partner selection are a key determinant of the gap. However, the aggregate evidence portrays a different reality. Specifically, we find that the gap is largest in the First Offer treatment, even though we observe no discrimination since men partner with men or women at equal rates in this treatment. This points to a change in bargaining behavior induced by the concealment of gender as the reason for the closing of the gap. Specifically, we find that women are successful at remaining or making their way back into coalitions.

In our third intervention, we investigated if allowing for coalition stability would close the gap. Evidence suggests that bargaining dynamics are, by and large, responsible for the observed pattern of outcomes. Initial male-male coalitions are more prone to result in a final agreement than mixed-gender ones in all treatments except the Optional Binding treatment. The reason why the gap closes when gender is concealed despite the initial coalitional instability of mixed-gender coalitions is that, upon dissolution, women are successful in making their way back into a coalition. This pattern contrasts relative to the Baseline and Compulsory First Offer treatments, where dissolutions favor the formation of new male-male coalitions.

One may naturally wonder what we can extrapolate from laboratory behavior to the *real world* where negotiations occur in more complex settings. Note that, in our game, all participants are

strategically symmetric at the beginning, the bargaining set (i.e., set of feasible alternatives) is clearly defined, and the outside options are identical (0 payoff for disagreement). Although these conditions are hardly observed outside the laboratory, previous literature on bilateral wage negotiations has shown that gaps in negotiation outcomes may emerge in the presence of asymmetries (such as status or power) and when the set of feasible bargaining outcomes is ambiguous (Recalde and Vesterlund, 2022; Bowles et al., 2022). The gap tends to vanish under more stable and symmetric settings (Leibbrandt and List, 2015). Therefore, the gender gap observed in the baseline treatment is likely to be a lower bound of what can arise in settings where the social context is skewed against women in terms of power differentials, external options, and the clarity of the negotiation process (Sandberg, 2013). Clearly, this is an area to which empirical studies and field experiments can contribute.

Our experimental results generated a series of findings that we had not hypothesized. Specifically, the fact that women become the preferred coalition partner of men when optionally binding offers are available is quite surprising. One may be tempted to argue that men signal some type of virtuous behavior by committing to a coalition with a female, but it remains an open question why they do not behave similarly in the baseline. Another reason may be that the existence of binding offers primes men to think of women as more stable partners, and hence increases their willingness to partner with them. We cannot tell exactly why men change their behavior, but in line with our initial research hypothesis, we have documented that an increase in mixed-gender coalition stability increases women's odds of sharing in the benefits, and ultimately, closes the gender gap. Future experiments can shed light on the reasons men change their partner's gender preference.

Our work highlights the role that institutional variables play in the emergence of gender differences in a setting where the data show men and women have identical abilities. It is important to note that institutions, formal and informal, are often the product of choices (deliberate or unconscious) by those involved. Because women have been historically underrepresented in many real-world settings such as legislatures, boards of directors, and top management teams, one might conjecture that the norms of behaviors, protocols, and other institutional factors favor men in such settings. Our results, which we acknowledge emanate from a stylized negotiation setting absent any social context, provide a glimmer of hope that we can restructure institutions to balance the importance of "female" characteristics for success. One long term effect of fixing institutions to yield more equitable outcomes is that this may foster entry by women into bargaining settings, and as a consequence, help increase female representation in decision-making bodies.

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Online Appendix

Table of Contents

A Experimental Interface

Figure A1: Bargaining Interface of the Baseline Treatment
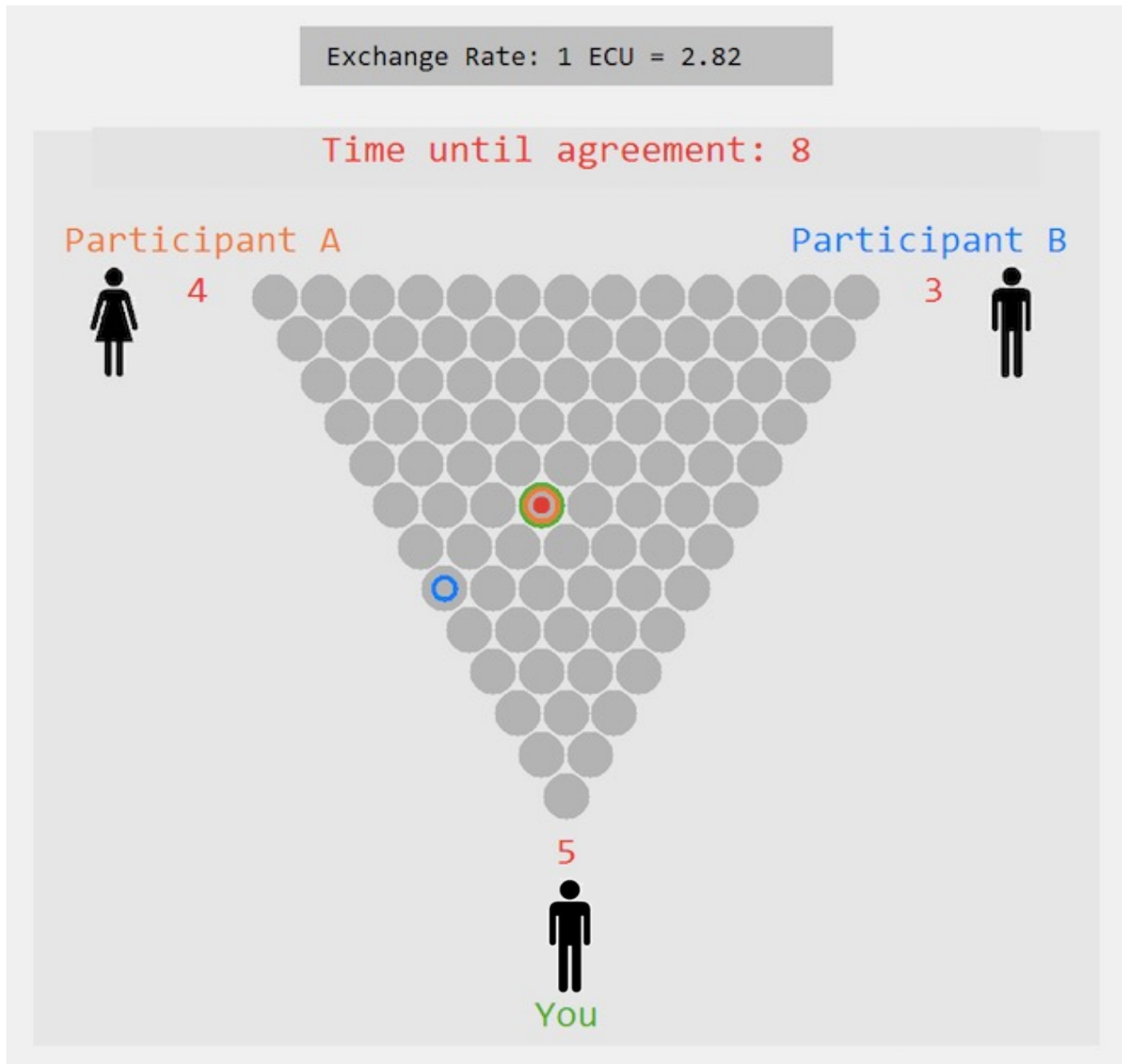
Notes: This figure shows the screen that subjects saw in the experiments. On each vertex of the triangle, a silhouette is shown revealing the gender of the subject in question. Each gray circle represents a different possible division of the pie. Offers are made by left-clicking on the triangle in a given gray-shaded circle and a ring with the subjects color is displayed. By clicking outside the triangle a subject withdraws her current offer. When two subjects click on the same gray circle (i.e., make the same offer) a red dot appears in the circle and a timer indicating the "time until agreement" is displayed so that subjects are aware that a temporary agreement is in place. On the top part of the screen, subjects can see how the exchange rate between experimental currency units (ECUs) and Euros decays as each second elapses. In the *Compulsory First Offer* treatment, the same screen was shown to make the opening offers. In the *No Gender* treatment, no silhouettes were shown. In the *Optional Binding* treatment, binding offers were made by a right click. Binding offers displayed as a hollow diamond instead of a ring.

B   Experimental Instructions

B.1 Baseline and No Gender Instructions

MAIN PART OF THE EXPERIMENT

ON-SCREEN INSTRUCTIONS:

In this part of the experiment, participants will interact in groups of three. The interaction will be repeated twelve times. In what follows, we will call each repetition of the interaction a "round".

During each round, the three members of a group will have the opportunity to distribute **12 POINTS** amongst themselves.

The points you receive will determine how much money you earn at the end of the experiment (exactly how will be explained later, but the more points you receive, the more money you can expect to earn).

In order to help you understand exactly how the interactions work, we will now demonstrate the functioning of the program on your screen.

There will be a short tutorial. In the tutorial, you will be shown the screen that will be used during the real rounds. How to understand this screen and use it to interact with the other participants in your group is explained to you in the printed instructions you have been given.

During this tutorial **no money will be awarded**. The purpose of this tutorial is only to help you understand how the program works. You will be informed before the real interactions begin. Please follow the printed instructions carefully. It is important to understand how the program works!

PLEASE CLICK "Begin Tutorial" IF YOU ARE READY TO BEGIN THE TUTORIAL.
Follow the printed instructions to complete the tutorial.

1

TUTORIAL STAGE 1

Read the instructions below and complete ALL the listed exercises.
Note: you will not be able to finish the tutorial if you do not complete ALL the listed exercises.

DO NOT click "Move to stage 2" until you are specifically asked to do so.

UNDERSTANDING THE TRIANGLE

- The participants in your group must decide how to divide **12 points** amongst yourselves.
- On your screen, you will see small circles arranged in the form of a large triangle. Each circle represents a different way of allocating the points amongst you and the other two participants you are interacting with in a given round.
- The corners of the triangle are labeled **"You"**, "Participant A", and "Participant B".
- The circles in the corners of the triangle correspond to allocations in which the indicated corner participant receives all available points, while the others receive no points.
- **The closer a circle is to a given corner, the more points the corresponding allocation assigns to that participant.**
- If you move your mouse over a circle, the corresponding points to be allocated to each participant **are displayed in the appropriate corners of the triangle**.

- **EXERCISES*:***

    o **Move your mouse around** the triangle until you understand how the circles are arranged.
    o **Click on a circle** to select it. Notice that the selected circle is marked in green.
    o **Click outside the triangle**. The green circle should disappear. During the real interactions, when you click on a circle, this will be shown on the screens of the two other participants you are interacting with, and it will disappear from their screens if you click outside the triangle. If two or more participants select the same circle continuously for 10 seconds, the points are allocated accordingly in that round.

MAKING AGREEMENTS

- During the real interactions, any of the three participants (including you) may click on any circle at any time.
- When you click on a circle, the other two participants in your group will see this circle marked on their screen.

2

- When another participant in your group clicks on a circle on their screen, it will be marked on your screen in the color corresponding to that participant: orange for "Participant A", blue for "Participant B".
- Clicking on an unmarked circle is like suggesting that division.
- Clicking on a circle marked by another participant is like provisionally accepting the division they have suggested. **The offer will only be really accepted and determine the number of points earned in that round if neither you nor the other participant clicks elsewhere in the following 10 seconds.**
- When another participant clicks on a circle you have marked, they have provisionally accepted the division you have suggested. Again, your offer will only be really accepted and determine the number of points earned in that round if neither you nor the other participant clicks elsewhere in the following 10 seconds.
- When there is a provisional agreement in place, a **red circle** will appear in the appropriate circle.
- When there is a provisional agreement in place, a clock will start counting down **"Time until agreement" from 10 seconds** to let you know when it will be really accepted if neither participant clicks elsewhere. You can see this shown in red on the picture at the end of these instructions.
- For the division to be implemented **at least two of the three group members must arrive at an agreement.**

THE VALUE OF POINTS, TIME LITMITS and ROUND EARNINGS

- **At the start of each round, each point will be worth €3**. Thus, at the start of each round, you have $€3 \times 12\ points = €36$ to divide within your group.
- The value of the points will decrease throughout the round. In particular, **a point will be worth €0.02 (2 cents) less in each second**. For example, after 20 seconds pass since the beginning of a round, each point will be worth $€3 - 20\ seconds \times\ €0.02 = €2.6$.
- The exchange rate of points to euros at a given point in time will be shown at the top left side of the screen. You can see this in the picture at the end of these instructions.
- **The round will end, when an agreement is reached (that is, when at least two participants continuously agree on the allocation of points for 10 seconds) or when the exchange rate reaches €0 per point.** If there is no agreement after the exchange rate has reached €0 per point, the round will end, and no one will receive any points.
- **If the agreement is finalized, your earnings for a particular round will be determined by the number of points allocated to you in that round and the exchange rate at the time when the agreement is confirmed:**

3

Your earnings for a round

$$= number\ of\ points\ allocated\ to\ you\ in\ the\ circle\ under\ agreement$$
$$\times exchange\ rate\ at\ the\ time\ when\ the\ agreement\ is\ confirmed$$

DO NOT CLICK "Move to stage 2" JUST YET!

- When you click "Move to stage 2" two things will happen:
    - Two circles, one blue and one orange, will appear on *random circles* in the triangle. These are what it looks like when the participants you are interacting with click on their triangle, but the locations of these circles have been chosen by the computer at random. You will not be interacting with real participants for now.
    - The clock will start and the exchange rate of points to euros will start to decrease. Don't worry! The points received in this tutorial will not affect how much money you earn in this experiment. Also, you can repeat this part of the tutorial as many times as you like.
- There will be only two differences between Stage 2 of the tutorial and the real interactions:
    - In the tutorial rounds the points you receive will not affect how much money you earn.
    - In the real interactions the blue and orange circles may move as the participants you are interacting with click on different circles on their triangles.

TUTORIAL STAGE 2

CLICK ON "Move to stage 2" and complete the following exercises.

- ***Exercises:***
    - Watch the top line of the screen and see how the exchange rate of points to euros decreases.
    - Click the blue circle and see how the "Time until agreement" starts counting down until zero, when the round will "end" and the number of points you receive is determined. **Then click "Play another tutorial round" and repeat with the orange circle and click "Play another tutorial round" again.**
    - Now try clicking on the blue circle then clicking on an empty circle or outside the triangle before the 10 seconds are up. See how the "Time until agreement" starts counting down and then disappears when you click elsewhere.
    - Now try clicking on the blue circle then clicking on the orange circle before the 10 seconds are up. See how the "Time until agreement" starts counting down and then starts again at 10 seconds when you click on the second circle.
    - You can now experiment with the tutorial screen as much as you like.

4

B.2   Compulsory First Offer

MAIN PART OF THE EXPERIMENT

ON-SCREEN INSTRUCTIONS:

In this part of the experiment, participants will interact in groups of three. The interaction will be repeated twelve times. In what follows, we will call each repetition of the interaction a "round".

During each round, the three members of a group will have the opportunity to distribute **12 POINTS** amongst themselves.

The points you receive will determine how much money you earn at the end of the experiment (exactly how will be explained later, but the more points you receive, the more money you can expect to earn).

In order to help you understand exactly how the interactions work, we will now demonstrate the functioning of the program on your screen.

There will be a short tutorial. In the tutorial, you will be shown the screen that will be used during the real rounds. How to understand this screen and use it to interact with the other participants in your group is explained to you in the printed instructions you have been given.

During this tutorial **no money will be awarded**. The purpose of this tutorial is only to help you understand how the program works. You will be informed before the real interactions begin. Please follow the printed instructions carefully. It is important to understand how the program works!

PLEASE CLICK "Begin Tutorial" IF YOU ARE READY TO BEGIN THE TUTORIAL.
Follow the printed instructions to complete the tutorial.

1

Read the instructions below and complete ALL the listed exercises.
Note: you will not be able to finish the tutorial if you do not complete ALL the listed exercises.

DO NOT click "Move to stage 2" until you are specifically asked to do so.

UNDERSTANDING THE TRIANGLE

- The participants in your group must decide how to divide **12 points** amongst yourselves.
- On your screen, you will see small circles arranged in the form of a large triangle. Each circle represents a different way of allocating the points amongst you and the other two participants you are interacting with in a given round.
- The corners of the triangle are labeled **"You"**, "Participant A", and "Participant B".
- The circles in the corners of the triangle correspond to allocations in which the indicated corner participant receives all available points, while the others receive no points.
- **The closer a circle is to a given corner, the more points the corresponding allocation assigns to that participant.**
- If you move your mouse over a circle, the corresponding points to be allocated to each participant **are displayed in the appropriate corners of the triangle**.

- **EXERCISES:**

    o **Move your mouse around** the triangle until you understand how the circles are arranged.
    o **Click on a circle** to select it. Notice that the selected circle is marked in green.
    o **Click outside the triangle**. The green circle should disappear. During the real interactions, when you click on a circle, this will be shown on the screens of the two other participants you are interacting with, and it will disappear from their screens if you click outside the triangle. If two or more participants select the same circle continuously for 10 seconds, the points are allocated accordingly in that round.

MAKING AGREEMENTS

- Before you see any proposal in the triangle, you will submit your own proposal. Once everyone has submitted their proposal, you will see each of them on the screen. Bargaining will commence 10 seconds later.

2

- During the real interactions, any of the three participants (including you) may click on any circle at any time.
- When you click on a circle, the other two participants in your group will see this circle marked on their screen.
- When another participant in your group clicks on a circle on their screen, it will be marked on your screen in the color corresponding to that participant: orange for "Participant A", blue for "Participant B".
- Clicking on an unmarked circle is like suggesting that division.
- Clicking on a circle marked by another participant is like provisionally accepting the division they have suggested. **The offer will only be really accepted and determine the number of points earned in that round if neither you nor the other participant clicks elsewhere in the following 10 seconds.**
- When another participant clicks on a circle you have marked, they have provisionally accepted the division you have suggested. Again, your offer will only be really accepted and determine the number of points earned in that round if neither you nor the other participant clicks elsewhere in the following 10 seconds.
- When there is a provisional agreement in place, a **red circle** will appear in the appropriate circle.
- When there is a provisional agreement in place**,** a clock will start counting down **"Time until agreement" from 10 seconds** to let you know when it will be really accepted if neither participant clicks elsewhere. You can see this shown in red on the picture at the end of these instructions.
- For the division to be implemented **at least two of the three group members must arrive at an agreement.**

THE VALUE OF POINTS, TIME LITMITS and ROUND EARNINGS

- **At the start of each round, each point will be worth €3**. Thus, at the start of each round, you have $€3 \times 12\ points = €36$ to divide within your group.
- The value of the points will decrease throughout the round. In particular**, a point will be worth €0.02 (2 cents) less in each second**. For example, after 20 seconds pass since the beginning of a round, each point will be worth $€3 - 20\ seconds \times\ €0.02 = €2.6$.
- The exchange rate of points to euros at a given point in time will be shown at the top left side of the screen. You can see this in the picture at the end of these instructions.
- **The round will end, when an agreement is reached (that is, when at least two participants continuously agree on the allocation of points for 10 seconds) or when the exchange rate reaches €0 per point.** If there is no agreement after the exchange rate has reached €0 per point, the round will end, and no one will receive any points.

3

- **If the agreement is finalized, your earnings for a particular round will be determined by the number of points allocated to you in that round and the exchange rate at the time when the agreement is confirmed:**

$Your\ earnings\ for\ a\ round$
$$= number\ of\ points\ allocated\ to\ you\ in\ the\ circle\ under\ agreement$$
$$\times exchange\ rate\ at\ the\ time\ when\ the\ agreement\ is\ confirmed$$

DO NOT CLICK "Move to stage 2" JUST YET!

- When you click "Move to stage 2" two things will happen:
    - Two circles, one blue and one orange, will appear on *random circles* in the triangle. These are what it looks like when the participants you are interacting with click on their triangle, but the locations of these circles have been chosen by the computer at random. You will not be interacting with real participants for now.
    - The clock will start and the exchange rate of points to euros will start to decrease. Don't worry! The points received in this tutorial will not affect how much money you earn in this experiment. Also, you can repeat this part of the tutorial as many times as you like.
- There will be only two differences between Stage 2 of the tutorial and the real interactions:
    - In the tutorial rounds the points you receive will not affect how much money you earn.
    - In the real interactions the blue and orange circles may move as the participants you are interacting with click on different circles on their triangles.

TUTORIAL STAGE 2

CLICK ON "Move to stage 2" and complete the following exercises.
- *First Screen: Initial Offers*
    - Note that the exchange rate of points to euros is not changing during this first screen.
    - Click on any division you wish. You will be able to see how much is being offered to each of the other group members.
    - To change your proposal, click on another division.
    - Now click the button on the bottom that says: "Submit Proposal".
    - The other participants in your group will be able to see your proposal until they have made their proposals.

- *Exercises:*

4

o Please see the first proposals. They will be visible for 10 seconds and cannot be changed. Note that the exchange rate of points to euros remains constant during these 10 seconds.
o (10 sec later) Watch the top line of the screen and see how the exchange rate of points to euros decreases.
o
o Watch the top line of the screen and see how the exchange rate of points to euros decreases.
o Click the blue circle and see how the "Time until agreement" starts counting down until zero, when the round will "end" and the number of points you receive is determined. **Then click "Play another tutorial round" and repeat with the orange circle and click "Play another tutorial round" again.**
o Now try clicking on the blue circle then clicking on an empty circle or outside the triangle before the 10 seconds are up. See how the "Time until agreement" starts counting down and then disappears when you click elsewhere.
o Now try clicking on the blue circle then clicking on the orange circle before the 10 seconds are up. See how the "Time until agreement" starts counting down and then starts again at 10 seconds when you click on the second circle.
o You can now experiment with the tutorial screen as much as you like.

When you have understood how the interactions work, click on "Finish tutorial" button. When all participants have finished the tutorial, the real interactions will begin.

5

B.3 Optional Binding Aggreement

MAIN PART OF THE EXPERIMENT

ON-SCREEN INSTRUCTIONS:

In this part of the experiment, participants will interact in groups of three. The interaction will be repeated twelve times. In what follows, we will call each repetition of the interaction a "round".

During each round, the three members of a group will have the opportunity to distribute **12 POINTS** amongst themselves.

The points you receive will determine how much money you earn at the end of the experiment (exactly how will be explained later, but the more points you receive, the more money you can expect to earn).

In order to help you understand exactly how the interactions work, we will now demonstrate the functioning of the program on your screen.

There will be a short tutorial. In the tutorial, you will be shown the screen that will be used during the real rounds. How to understand this screen and use it to interact with the other participants in your group is explained to you in the printed instructions you have been given.

During this tutorial **no money will be awarded**. The purpose of this tutorial is only to help you understand how the program works. You will be informed before the real interactions begin. Please follow the printed instructions carefully. It is important to understand how the program works!

PLEASE CLICK "Begin Tutorial" IF YOU ARE READY TO BEGIN THE TUTORIAL. Follow the printed instructions to complete the tutorial.

1

TUTORIAL STAGE 1

Read the instructions below and complete ALL the listed exercises.
Note: you will not be able to finish the tutorial if you do not complete ALL the listed exercises.
DO NOT click "Move to stage 2" until you are specifically asked to do so.

UNDERSTANDING THE TRIANGLE

- The participants in your group must decide how to divide **12 points** amongst yourselves.
- On your screen, you will see small gray colored circles arranged in the form of a large triangle. Each circle represents a different way of allocating the points amongst you and the other two participants you are interacting with in a given round.
- The corners of the triangle are labeled **"You"**, "Participant A", and "Participant B".
- The circles in the corners of the triangle correspond to allocations in which the indicated corner participant receives all available points, while the others receive no points.
- **The closer a circle is to a given corner, the more points the corresponding allocation assigns to that participant.**
- If you move your mouse over a circle, the corresponding points to be allocated to each participant **are displayed in the appropriate corners of the triangle**.

UNDERSTANDING HOW TO MAKE OFFERS AND REACH AGREEMENTS
- An offer is made by clicking on a grey circle. Everyone in your group of three participants will see the offer you have made, if any.
- There are two types of offers: Tentative and Definitive, which we explain now.
    - o **Tentative:** when you **left** click on a gray circle in the triangle you are making a tentative offer.
        - ▪ A green colored ring will appear in your screen and others will see your offer
    - o **Definitive:** when you **right** click on a gray circle you are making a definitive offer.
        - ▪ A green colored diamond will appear on your screen and other will see your offer
- **An agreement is reached when two or more participants in the group click on the same gray circle in the triangle and remain there without clicking elsewhere for 10 seconds. We will explain later in detail how agreements are reached, as this depends on the types of offers that you and others are making.**

2

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- **EXERCISES***:*

  o **Move your mouse around** the triangle until you understand how the gray circles are arranged.
  o **Click on a circle using the left mouse button** to select it. Notice that the selected circle is marked with a **green ring**. This is a **TENTATIVE offer.**
  o **Click on a circle using the right mouse button** to select it. Notice that the selected circle is marked with a **green diamond**. This is a **DEFINITIVE offer.**
  o **Click outside the triangle**. The green ring/diamond should disappear.

During the real interactions, when you click on a circle (with left/right mouse button), this will be shown on the screens of the two other participants you are interacting with (as a ring/diamond), and it will disappear from their screens if you click outside the triangle.

3

MAKING AGREEMENTS

- During the real interactions, any of the three participants (including you) may click on any circle at any time with left/right mouse button.
- When you click on a gray circle with a left/right mouse button, the other two participants in your group will see this circle marked on their screen as a ring/diamond.
- When another participant in your group clicks on a gray circle on their screen with a left/right mouse button, it will be marked on your screen as a ring/diamond in the color corresponding to that participant: orange for "Participant A", blue for "Participant B".
- Clicking on an unmarked gray circle is like suggesting that division of points.
- When two or more people click on the same gray circle red dot will appear indicating a provisional agreement.
- Also, a 10 second countdown timer is activated. The table below summarizes all the possible situations in which a provisional agreement can become a final agreement. This will depend on the type of offers that are made (TENTATIVE or DEFINITIVE)

Situation	How to reach final agreement?	Other aspects
2 or 3 participants make the same TENTATIVE offer.	2 or more of the participants must remain for 10 seconds without clicking elsewhere until the countdown stops.	During these 10 seconds anyone can click anywhere. Participants can also decide to right click on the same offer to convert it to DEFINITIVE
2 or 3 participants make the same DEFINITIVE offer.	The agreement is reached immediately	No more clicks can be made by anyone. A countdown of 10 seconds will also be shown.
2 or 3 participants make the same offer but only 1 of them is making a DEFINITIVE offer.	2 or more of the participants must remain for 10 seconds without clicking elsewhere.	During these 10 seconds anyone can click anywhere. Participants can also decide to right click on the same offer to convert it to DEFINITIVE, or left-click to convert their offer into TENTATIVE.
2 or 3 participants make the same offer but only 1 of them is making DEFINITIVE offer. Another participant switches to a DEFINITVE offer too.	The agreement is reached immediately when two offers are definitive.	No more clicks can be made by anyone. The countdown continues for the remainder of the time since the provisional agreement.

4

- Note that whenever two or more people click on the same gray circle the timer appears. The only difference between the types of offers is that if two or more participants have made DEFINITIVE offers, they can no longer click anywhere else – the agreement is finalized as is. The timer will continue for the 10 seconds.
- Also note that switching from TENTATIVE to DEFINITIVE (or vice versa) does not restart the timer.
- When there is a provisional agreement in place**,** a clock will start counting down **"Countdown" from 10 seconds** to let you know when it will be really accepted if neither participant clicks elsewhere. You can see this shown in red on the picture at the end of these instructions.

THE VALUE OF POINTS, TIME LIMITS and ROUND EARNINGS

- **At the start of each round, each point will be worth €3**. Thus, at the start of each round, you have $€3 \times 12\ points = €36$ to divide within your group.
- The value of the points will decrease throughout the round. In particular**, a point will be worth €0.02 (2 cents) less in each second**. For example, after 20 seconds pass since the beginning of a round, each point will be worth $€3 - 20\ seconds \times €0.02 = €2.6$.
- The exchange rate of points to euros at a given point in time will be shown at the top left side of the screen. You can see this in the picture at the end of these instructions.
- The bargaining round ends when two or three participants have been in agreement for 10 seconds **or when the exchange rate reaches €0 per point.**

- **If the agreement is finalized, your earnings for a particular round will be determined by the number of points allocated to you in that round and the exchange rate at the time when the agreement is confirmed:**

$Your\ earnings\ for\ a\ round$
$= number\ of\ points\ allocated\ to\ you\ in\ the\ circle\ under\ agreement$
$\times exchange\ rate\ at\ the\ time\ when\ the\ agreement\ is\ confirmed\ (end\ of\ the\ 10\ seconds)$

DO NOT CLICK "Move to stage 2" JUST YET!

- When you click "Move to stage 2" two things will happen:
    - Two offers, one blue and one orange, one ring and one diamond, will appear on *random circles* in the triangle. This is what it looks like when the participants you are interacting with click on their triangle, but the locations of these offers have been chosen by the computer at random. You will not be interacting with real participants for now.

5

- o The clock will start and the exchange rate of points to euros will start to decrease. Don't worry! The points received in this tutorial will not affect how much money you earn in this experiment. Also, you can repeat this part of the tutorial as many times as you like.
- There will be only two differences between Stage 2 of the tutorial and the real interactions:
    - o In the tutorial rounds the points you receive will not affect how much money you earn.
    - o In the real interactions the blue and orange rings/diamonds may move as the participants you are interacting with click on different circles on their triangles.

TUTORIAL STAGE 2

CLICK ON "Move to stage 2" and complete the following exercises.

- *Exercises:*
    - o Watch the top line of the screen and see how the exchange rate of points to euros decreases.
    - o Click the ring offer and see how the "Countdown" starts counting down until zero, when the round will "end" and the number of points you receive is determined. **Then click "Play another tutorial round".**
    - o Right click the diamond offer and see how the agreement with two DEFINITIVE offers is implemented. **Click "Play another tutorial round".**
    - o Now try clicking on the ring then clicking on an unmarked circle or outside the triangle before the 10 seconds are up. See how the countdown starts and then disappears when you click elsewhere.
    - o Now try clicking on the ring then clicking on the diamond (DEFINITIVE offer) with a left mouse click (TENTATIVE offer) before the 10 seconds are up. See how the countdown starts and then restarts again at 10 seconds when you click on the diamond.
    - o You can now experiment with the tutorial screen as much as you like.

When you have understood how the interactions work, click on "Finish tutorial" button. When all participants have finished the tutorial, the real interactions will begin.

6

C Supporting Tables and Figures

Figure C2: Gender Gap
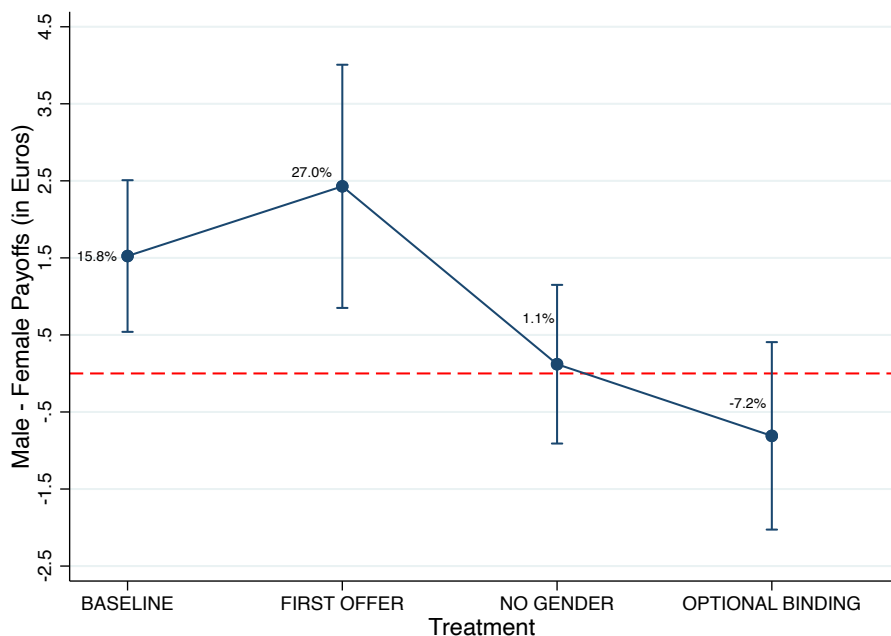
Notes: Whiskers represent the 95% confidence intervals clustering standard errors at the matching group level. The percentage values displayed correspond to the gender gap as a proportion of female earnings. See Table C1 for regression estimation results.

Table C1: OLS for Gender Gap[1] in Earnings

	Coef.	s.e.
Compulsory First Offer	0.905	(0.920)
No Gender	-1.404*	(0.704)
Optional Binding	-2.334***	(0.774)
Constant	1.524***	(0.487)
N	1728	
F-stat	5.126	
R^2	0.011	

[1] The dependent variables is the difference between the mean share of the pie men receive and the female share in a bargaining group.

Standard errors in parentheses clustered at the matching group level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The Baseline treatment is the omitted category.

Table C2: OLS for Minimum Winning Coalitions

	Coef.	s.e.
Compulsory First Offer	0.036	(0.044)
No Gender	-0.032	(0.051)
Optional Binding	-0.008	(0.048)
Constant	0.772***	(0.033)
N	1728	
F-stat	0.697	
R^2	0.003	

Standard errors in parentheses clustered at the matching group level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The Baseline treatment is the omitted category.

Table C3: OLS for Mixed Gender Coalition

	(1) Baseline	(2) Compulsory First Offer	(3) No Gender	(4) Optional Binding
Constant	0.587	0.545	0.648	0.702
	(0.022)	(0.034)	(0.015)	(0.032)
N	463	310	284	275
p-value for Wald Test Cons=2/3	0.003	0.009	0.253	0.306

Standard errors in parentheses clustered at the matching group level.

Table C4: OLS for Female Share in Mixed Gender Coalition

	(1) Baseline	(2) Compulsory First Offer	(3) No Gender	(4) Optional Binding
Constant	0.505	0.496	0.519	0.497
	(0.004)	(0.009)	(0.012)	(0.005)
N	272	169	184	193
p-value for Wald Test Cons=0.5	0.220	0.638	0.168	0.565

Standard errors in parentheses clustered at the matching group level. Only MWC agreements.

Table C5: OLS for Male First Proposers

	(1) All Proposals		(2) MWC Proposals	
No Gender	-0.026	(0.045)	-0.025	(0.058)
Optional Binding	-0.035	(0.050)	-0.032	(0.055)
Cons.	0.760***	(0.031)	0.771***	(0.043)
Wald Tests p-values:				
Cons=2/3	0.005		0.021	
Cons + No Gender =2/3	0.046		0.056	
Cons + Optional Binding =2/3	0.141		0.041	
N	1344		905	
F-stat	0.291		0.178	
R^2	0.001		0.001	

Standard errors in parentheses clustered at the matching group level. The Baseline treatment is the omitted category.

Table C6: Mean Percentage of the Fund in Agreed Splits[1] by First Mover and Gender

	All 1st Movers		Female 1st Movers		Males 1st Movers	
	No	Yes	No	Yes	No	Yes
Baseline	32.4	35.2	29.4	32.6	34.3	36.0
No Gender	33.1	33.9	33.4	32.3	32.9	34.4
Optional Binding	32.0	36.0	33.8	38.5	31.0	35.1

[1] This refers to the share that the first mover ends with in the agreement reached. It is not necessarily the share that the first mover claims in her proposal, as the first proposal need not be implemented.

Table C7: OLS for Share of the Fund in Agreed Splits

	(1) Baseline	(2) No Gender	(3) Optional Binding
1st Mover	0.028*	0.005	0.041**
	(0.016)	(0.019)	(0.015)
Cons.	0.324***	0.332***	0.320***
	(0.005)	(0.006)	(0.005)
Wald Test:			
First Mover + Cons=1/3 (p-value)	0.098	0.788	0.023
N	1800	1152	1080
R^2	0.003	0.000	0.008

Standard errors in parentheses clustered at the matching group level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable is the share of the fund that the first mover ends with in the agreement reached by the group. It is not necessarily the share that the first mover claims in her proposal, as the first proposal need not be implemented.

Table C8: OLS For Proportion of the Fund in Agreed Splits[1]

	Baseline	No Gender	Optional Binding
Male	0.048***	-0.003	-0.028
	(0.009)	(0.018)	(0.023)
1st Mover	0.030	-0.010	0.047
	(0.025)	(0.024)	(0.031)
Male × 1st Mover	-0.011	0.021	-0.005
	(0.026)	(0.013)	(0.033)
Cons.	0.294***	0.334***	0.338***
	(0.009)	(0.013)	(0.015)
Wald tests[2] (p-values):			
Male first mover final share = 1/3	0.058	0.528	0.083
Female first mover final share =1/3	0.722	0.663	0.072
N	1800	1152	1080
F-stat	13.936	1.188	3.149
R^2	0.012	0.001	0.012

Standard errors in parentheses clustered at the matching group level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

[1] This variable refers to the share that the first mover ends with in the agreement reached. It is not necessarily the share that the first mover claims in her proposal, as the first proposal need not be implemented.

[2] For the male first mover advantage we test the null hypotheses that Constant + Male + Male× First Mover + First Mover =1/3. For female first mover advantage we test Constant + First Mover =1/3.

Table C9: Regression for Males Partnering With Males in Opening MWC Offers

	(1)	
No Gender	-0.035	(0.030)
First Offer	-0.023	(0.039)
Optional Binding	-0.095**	(0.037)
Cons.	0.547***	(0.023)
N	1204	
F-stat	2.326	

Standard errors in parentheses clustered at the matching group level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The Baseline treatment is the omitted category.

Table C10: Probit Regression for Final Agreement as a Function of the Coalition's Gender Composition, Marginal Effects

	(1) All Initial MWCs		(2) Non-binding MWCs	
Compulsory First Offer	-0.030	(0.042)	-0.030	(0.042)
No Gender	-0.037	(0.040)	-0.037	(0.040)
Optional Binding	0.223***	(0.045)	0.134**	(0.059)
Cons.				
N	1291		1155	

Standard errors in parentheses clustered at the matching group level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The Baseline treatment is the omitted category. The dependent variable is equal to 1 if the initial coalition is also the final agreement and 0 otherwise.

Table C11: Probit Regression for Final Agreement as a Function of the Coalition's Gender Composition, Marginal Effects

	Baseline	Compulsory First Offer	No Gender	Optional Binding (All)	Optional Binding (Non-binding)
Male-Male Initial Coalition	0.112**	0.154**	0.137**	-0.094*	-0.167**
	(0.044)	(0.064)	(0.058)	(0.053)	(0.078)
N	465	283	278	265	129

Standard errors in parentheses clustered at the matching group level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. "Male-Female coalition" is the omitted category. The dependent variable is equal to 1 if the initial coalition is also the final agreement and 0 otherwise.

Table C12: Regression for Binding Offers in Optional Binding Treatment

	(1)	(2)	(3)	(4)	(5)
Male	0.015	0.012	-0.046	0.011	0.323
	(0.115)	(0.114)	(0.168)	(0.115)	(0.582)
MWC		0.060	0.000		
		(0.107)	(0.151)		
Male × MWC			0.085		
			(0.225)		
Share demanded (in points)				-0.029	0.012
				(0.023)	(0.078)
Male × Share Demanded					-0.053
					(0.106)
Cons.	0.333***	0.294**	0.333**	0.503***	0.260
	(0.090)	(0.121)	(0.143)	(0.144)	(0.436)
N	360	360	360	360	360
F-stat	0.018	0.156	0.116	0.798	0.489
R^2	0.000	0.003	0.005	0.005	0.008

Standard errors in parentheses clustered at the matching group level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C13: Percentage of Binding and Non-Binding Opening Offers, by Gender in Optional Binding Treatment

	Female 1st Offer				Male 1st Offer			
	Non-Binding		Binding		Non-Binding		Binding	
A. All First Offers:								
	66.7	[66]	33.3	[33]	65.1	[170]	34.9	[91]
B. By type of split:								
Female Male MWC	65.2	[43]	66.7	[22]	38.8	[66]	40.7	[37]
Male-Male MWC	n/a		n/a		30.0	[51]	36.3	[33]
Grand Coalition	34.8	[23]	33.3	[11]	30.0	[51]	23.1	[21]
Other	0	[0]	0	[0]	1.2	[2]	0	[0]

Number of observations in square brackets.

Table C14: Fate of Initial (Temporary) MWC Agreements

	Gender Composition of Coalition	
	Male-Female (Male Excluded)	**Male-Male (Female Excluded)**
Panel A: BASELINE		
Same coalition partners		
Implemented as is	161 (55%)	114 (65%)
Renegotiated	14 (5%)	9 (5%)
New coalition partners		
New MF	52 (18%)	47 (27%)
New MM	44 (15%)	n.a.
Grand Coalition	21 (7%)	3 (2%)
Num. Obs.	292	173
Panel B: COMPULSORY FIRST OFFER		
Same coalition partners		
Implemented as is	84 (52%)	78 (65%)
Renegotiated	5 (3%)	6 (5%)
New coalition partners		
New MF	34 (21%)	31 (25%)
New MM	33 (20%)	n.a.
Grand Coalition	7 (4%)	5 (4%)
Num. Obs.	163	120
Panel C: NO GENDER		
Same coalition partners		
Implemented as is	93 (50%)	59 (64%)
Renegotiated	11 (6%)	5 (5%)
New coalition partners		
New MF	41 (22%)	22 (24%)
New MM	29 (16%)	n.a.
Grand Coalition	12 (6%)	6 (7%)
Num. Obs.	186	92
Panel D: OPTIONAL BINDING		
Same coalition partners		
Implemented as is	153 (85%)	67 (79%)
Renegotiated	8 (4%)	1 (1%)
New coalition partners		
New MF	7 (4%)	16 (19%)
New MM	8 (4%)	n.a.
Grand Coalition	4 (2%)	1 (1%)
Num. Obs.	180	85

Table C15: Counteroffers after Initial (Temporary) MWC Agreement Formed

	Gender Composition of Coalition	
	Male-Female (Male Excluded)	**Male-Male (Female Excluded)**
Panel A: BASELINE		
Counteroffer made by:		
Male in provisional agreement	21 (7%)	24 (14%)
Female in provisional agreement	27 (9%)	n.a.
Excluded member	232 (79%)	147 (85%)
No counteroffer made	12 (4%)	2 (1%)
Num. Obs.	292	173
Panel B: COMPULSORY FIRST OFFER		
Counteroffer made by:		
Male in provisional agreement	10 (6%)	25 (21%)
Female in provisional agreement	15 (9%)	n.a.
Excluded member	130 (79%)	89 (74%)
No counteroffer made	9 (5%)	7 (6%)
Num. Obs.	164	121
Panel C: NO GENDER		
Counteroffer made by:		
Male in provisional agreement	25 (13%)	15 (16%)
Female in provisional agreement	27 (15%)	n.a.
Excluded member	126 (68%)	72 (78%)
No counteroffer made	8 (4%)	5 (5%)
Num. Obs.	186	92
Panel D: OPTIONAL BINDING		
Counteroffer made by:		
Male in provisional agreement	30 (17%)	35 (41%)
Female in provisional agreement	33 (18%)	n.a.
Excluded member	51 (29%)	23 (27%)
No counteroffer made	66 (37%)	27 (32%)
Num. Obs.	180	85

Table C16: Counteroffers by Excluded Member after Initial (Temporary) MWC Agreement Formed

| | Gender Composition of Coalition | |
	Male-Female (Male Excluded)	Male-Male (Female Excluded)
Panel A: BASELINE		
Propose a Grand Coalition	60 (26%)	32 (22%)
Propose a MWC to F	79 (34%)	n.a.
Propose a MWC to M	74 (32%)	100 (68%)
Other	19 (8%)	15 (10%)
Num. Obs.	232	147
Panel B: COMPULSORY FIRST OFFER		
Propose a Grand Coalition	28 (21%)	13 (15%)
Propose a MWC to F	47 (36%)	n.a.
Propose a MWC to M	49 (37%)	60 (67%)
Other	7 (5%)	16 (18%)
Num. Obs.	131	89
Panel C: NO GENDER		
Propose a Grand Coalition	40 (32%)	21 (29%)
Propose a MWC to F	34 (27%)	n.a.
Propose a MWC to M	31 (25%)	41 (57%)
Other	21 (17%)	10 (14%)
Num. Obs.	126	72
Panel D: OPTIONAL BINDING		
Propose a Grand Coalition	17 (33%)	6 (26%)
Propose a MWC to F	10 (20%)	n.a.
Propose a MWC to M	16 (31%)	15 (65%)
Other	8 (16%)	2 (9%)
Num. Obs.	51	23