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Enumerating Rights:
More is Not Always Better

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Abstract

Policy debates increasingly employ the language of 'rights': how they are assigned and what entitlements individuals in a society are due. Constitutional framers face the issue of whether to formally codify rights or not. While the obvious constitution design issues surround how rights enumeration affects the relationship between a government and its citizens, we instead analyze how rights enumeration affects how citizens interact with each other. We design and implement a novel experiment to test whether social cooperation depends on the assignment of individual rights, by framing the right of subjects to take a particular action either positively or negatively. We find that when rights are framed positively, there exists an 'entitlement effect' that reduces social cooperation levels and crowds-out the tendency of individuals to act pro-socially.

1. Introduction

A major insight from modern economics is that political institutions matter for economic outcomes. In particular, constitutions – as templates for establishing the "rules of the game" – impact a variety of economic variables through both private actions and public policy (Persson and Tabellini, 2005; Voigt, 2011). It has long been argued that a relatively small set of fundamental rights (for example to speech, liberty and security of the person) should be codified to protect citizens from government abuse (see Locke, 1689; Rawls, 1970). In this study, rather than focusing on interactions between individuals and government, we explore how the explicit enumeration of rights affects cooperation between citizens. We present results of a novel laboratory experiment which suggests that enumerating more rights does not encourage cooperation and may even reduce it. Moreover, we find evidence that the paths to cooperative outcomes are sensitive to the enumeration of rights, with the assignment of more rights leading to less pro-social interactions between paired individuals.

Arguably the most contentious issue in constitutional design is exactly what rights should be *enumerated* in a constitution. Historically, this debate has centered on the benefits of protecting individuals from unjust intrusion by the state, and indeed formal political rights have also been correlated with economic growth (Moral-Benito, 2012). In the same vein, codified property rights have been advocated to prevent capricious governments from expropriating private property, thus incentivizing investment and trade (Besley, 1995; Besley and Ghatak, 2010). But although evidence supports enumerating certain rights to protect the individual against the government, much less

attention has been given to whether greater enumeration of rights has a positive impact on the relationships *between individuals* in society.

In this work we instead focus on how rights-enumeration impacts the back-and-forth that takes place between individuals, as opposed to a more conventional approach which defines rights within the relationship between governments and citizens. Even though the exercise of rights between individuals has consequences for social cooperation, there has been little behavioral and economic analysis about what the structure of rights *should be*. Coase's (1960) canonical case of an externality-producing activity takes an intentionally agnostic view on how rights should be assigned: although economically efficient outcomes can be contracted when rights are given to at least one affected party, the particular *distribution* of such rights is unimportant. Of course, the assignment of rights still matters, and carries economic benefits for the holder.

Evidence suggests that enumerated rights that govern interactions between individuals may have positive, detrimental, neutral or ambiguous effects, so we discuss each in turn. Of these, the rights-as beneficial arguments are the most familiar. Positive effects of well-specified and well enforced property rights are that they help ensure that firms and individuals have an incentive to engage in economic activities. For example, well-written patent protections, the right to sole benefit from one's innovation for a set period, may encourage firms to innovate (Mansfield 1986; Moser 2013). The ability to enforce rights granted by a contract in reasonable time and cost facilitates business activity, and is a sensible government role since it facilitates economic growth (Knack and Keffer, 1995; Norton 1998).

On the other hand, suggestive evidence exists which supports the rights-as-detrimental hypothesis. Bjornskov and Mchangama (2019) use a cross-country panel dataset to investigate the consequences of including certain positive[1] economic and social rights in constitutions. They find that the inclusion of constitutional "rights to" education, health and social security in a constitution has either a negligible or even negative medium-term impact on real measures of these outcomes. The authors hypothesize that including formal rights to (for example) education might reduce the level of provision by increasing social demand for education while also distorting the incentives of education providers. A downside of stronger rights might also emerge from their impact on grassroots interactions within civil society. Sunstein (1993) opposed expanding including positive social rights in constitutions on the grounds that they encouraged a sense of entitlement among citizens. This view is supported by Frey (1997), who argues that more explicit regulation can crowd out social virtue and diminish social trust, resulting in less social cooperation. The crowding-out result was verified experimentally by Bohnet, Frey and Huck (2001). Elsewhere, Bjornskov and Voigt (2014) observed empirically that measures of social trust are negatively correlated with the length of national constitutions.

A third possibility is that some formal rights may in fact be redundant or ineffective. The framers of the United States Constitution, for example, used the 9th Amendment to indicate that rights did not necessarily depend on their formal inclusion

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[1] Positive rights are often differentiated from negative rights as implying a "right to" some claim rather than a "right from" interference. See Cross (2001).

in the constitution.[2] More recently, Chilton and Versteeg (2015) used a cross-country panel dataset to show that the nominal inclusion of many individual rights in a constitution had little or no effect on the real level of rights-protection. On the other hand, social norms of behavior might endure even when rights are formally assigned, implying that formal assignment is of secondary importance to social conventions. In a classic study, Ellickson (1986) demonstrates that California cattle ranchers and landowners settled land disputes informally, even when well-defined land rights and regulations existed on the books.

We investigate the question of rights enumeration and its implications for constitutional design using experimental methods at the level of two person interactions: does the assignment of rights among individuals, or the *lack of assignment* of rights to individuals, affect levels of coordination and/or the *paths* by which coordination outcomes are reached? Our experimental task is a two stage repeated version of the battle of the sexes (BOS) game, however, unlike experiments that examine cheap talk communication (Cooper et al., 1989; Crawford, 1998) in our game the first stage action concerns the order of play in the second stage and is binding. The BOS is an abstract representation of some key elements of society in that it features both cooperative and competitive tensions with two coordination equilibria, each of which is favored by a particular player. That not all cooperative equilibria are judged equally by each player

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[2] The full text of the Ninth Amendment reads "The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people."

introduces a competitive element: cooperation is necessary to preserve efficiency, but each player should prefer cooperation on their own terms.

In our design, we mimic real-world situations where there are repeated interactions in the same institutional environment by having fixed pairs of subjects interact for multiple periods. Each period has two stages of decision-making. In the first stage subjects must simultaneously announce whether they wish to choose first or second in the second stage. In the second stage subjects play the BOS in the manner determined in the first stage: simultaneously if both subjects chose to play first or second, or sequentially if one subject chose to play first and the other chose to play second. Unlike environments with pre-play communication of the cheap talk variety (e.g. Cooper et al. (1989)), in our environment the first stage interaction determines the sequence of actions subjects can take in the second stage.

To explore the effect of rights on decision making we introduce treatments which alter the implied distribution of rights among subjects by *framing* the first-stage environment differently across three treatments. In our first (baseline) treatment, no rights are enumerated in the first stage: both subjects are simply told that they can decide whether they want to choose first or second in the second stage of a period. In the second treatment, both subjects are told that they have the right to choose first in the second stage of a period but can choose *not* to exercise that right. The third treatment places subjects in an asymmetric environment: one is told s/he has the right to choose first but can waive it, whereas the other is told s/he does not have the right to choose first but can claim it. Although the game-theoretic structure is identical across treatments, such that

conventional analyses would predict no between-treatment differences, we find that different rights-distributions induced by the treatments do in fact have real effects.

In particular, we demonstrate the existence of a small but significant 'entitlement effect' that mitigates cooperation among paired subjects: when both individuals are framed as being endowed with a first-mover right, they cooperate significantly less than in the other treatments over time. We also find evidence of a specific form of pro-social behavior, in which first-moving players manipulate the second-stage game so as to advantage their partner. We find differences in this behavior *between* treatments. These differences suggest that the framing of rights affects not only the frequency of coordination, but also impacts the path of game play which leads to that coordination. Examining not just outcomes but also the path of game play is important as it elucidates any behavioral deviations from otherwise standard hypotheses on outcomes. That is to say, while we think that in terms of outcomes there ought to be no or minimal treatment differences, in terms of the path of play we can observe any differences in pro-social behavior across treatments.

We structure the paper as follows. In section 2 we discuss previous experimental research on 'rights'; section 3 describes the design and experimental procedures. We then discuss results in terms of both final outcomes and the path of play in section 4. We conclude in section 5 with our interpretation of the data from our unique design: societies codifying a large number of rights in constitutions may face the unintended consequence of reduced pro-social behavior.

2. Literature Review

A literature addresses the assignment of rights in one shot games using experimental methods. Hoffman and Spitzer (1982) test whether agents would voluntarily strike Pareto-optimal bargains in the absence of transaction costs in an externality setting, and under various informational regimes. They find that in approximately 90% of cases, Pareto-optimal outcomes were obtained through bargaining, although such bargains were not typically mutually advantageous: the holder of a 'right' settled for a smaller share of a larger pie than could have been obtained without cooperation. Hoffman and Spitzer (1985) extend this result by assigning rights based on the winner of a pre-negotiation game. Moreover, they add a frame in a second treatment where one group of subjects is told they have 'earned' their rights. While efficiency results continued to hold across experimental versions (i.e. maximized joint payoffs), payoff divisions were affected both by whether a right had been earned or not, and by the 'earned the right' frame. Oxoby and Spraggon (2008) obtained similar results when using a dictator game. Harrison and McKee (1985) extended Hoffman and Spitzer (1982, 1985) and exogenously varied rights regimes. They concluded that the division of surplus from bargaining is indeed sensitive to the assignment of rights, but that the efficiency result is largely invariant to this assignment.

These studies examined efficiency in a one shot, competitive bargaining environment where the main task was to 'split the pie', and found more egalitarian behavior than was predicted by economic theory. By contrast, we use a cooperative environment in which the magnitude of social surplus varies depending on the play of subjects in a repeated interaction. By allowing repeated interaction between subjects, we

can examine how cooperation develops over time depending on the framing of rights, with the result that the manner in which subjects' action space is framed affects their tendency to cooperate over time.[3] That the efficiency of outcomes is sensitive to whether 'rights' are framed in a positive or negative manner gives us a different experimental take on behavior. While our results do not overturn Coase's (1960) intuition, they do suggest that the efficiency-rights invariance result found there may be more sensitive than previously established.

Other studies have used experimental methods to explore how variation in legal rules can impact behavior. Croson and Johnston (2000) varied property rights regimes across treatments to investigate how bargaining is impacted by rights-assignment. They found that the decision to enter into consensual exchange of an object (versus non-consensual taking) is strongly affected by the entitlements implied by property rights. Oxoby (2013) found evidence that giving experimental subjects the ability to constrain the choice sets of others (i.e. limit others' rights) led to greater efficiency in a public-goods contribution game.

Next, Bohnet, Frey and Huck (2001) explored how the strength of contract enforcement affects subjects' willingness to enter into contracts. Using a multi-round design with fixed pairings, they found evidence that contracting does not increase monotonically in enforcement strength. That is, weaker enforcement elicited greater trustworthiness among subjects, while trustworthiness was crowded-out for medium-enforcement levels.

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[3] See Levin et al (1998) for a typology of valence frames that affect behavior.

Finally, our results complement Frechette et al (2003) and Frechette et al. (2005) who investigate proposal power in the bargaining model of Baron and Ferejohn (1989). While there is no direct frame in Frechette et al (2003) and Frechette et al. (2005), there is a power/entitlement effect when the odds of proposer power are altered vs. when odds are equal. Insofar as our 'rights' are similar to proposer power, we find complementary results to these analyses.

3. Experimental Design, Hypotheses and Procedure

3.1 The Battle of the Sexes

The BOS game offers an ideal vehicle for our exploration of rights frames because it captures both competitive and cooperative tensions. In the one-shot (simultaneous) version of the game with two players, each player chooses to attend either the Opera or a Fight (boxing match) that evening. Each player has a (different) favorite event: all else equal, Player I prefers to attend the Opera and Player II prefers to attend the Fight. The best option for each player is to attend their favorite event in the company of their partner, but both would rather attend the other event in the company of their partner rather than attend their favorite event alone.

The game is captured in the following matrix (with values used in our experimental implementation):

Table 1. The BOS Game

		Player II (Column)	
		Opera	Fight
Player I (Row)	Opera	(4,3)	(2,2)
	Fight	(2,2)	(3,4)

The pure-strategy Nash equilibria are (Opera, Opera) and (Fight, Fight), and both are Pareto-efficient outcomes. The game also admits a mixed strategy equilibrium in which each player randomizes over the two actions, selecting their favorite activity two-thirds of the time and their least-favorite activity one third of the time. This mixed strategy equilibrium is Pareto-inefficient, since players will mis-coordinate with probability 5/9.

In the sequential version of the BOS game, players move in a predetermined order. In the unique subgame-perfect equilibrium, the player who moves first chooses his favorite activity, and the other player best-responds to this choice by matching the chosen activity. Thus, coordination on the preferred activity of the first-mover is the predicted outcome in the sequential version.

In our experiment, described in the next subsection, subjects play a two-stage BOS game repeatedly with the same partner. This feature is important for our investigation of 'rights frames' as it allows the dynamic tension between competition and cooperation to fully develop in each pair of subjects. While repeatedly playing any equilibrium of the single stage BOS game is an equilibrium in the repeated game, the continued interaction of individuals also admits a vast set of potential dynamic behavior that could depend on the history of play within a pair.[4]

3.2   Design

To introduce framing (per Levin et al (1998)) we add a first stage to the BOS game in which players' decisions determine whether the second stage will be conducted as a

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[4] It is for this reason that our insights are obtained via repeated interaction vs. examining data from the first period only.

simultaneous or sequential version of the BOS. While the BOS game itself does not change between our three treatments, the first stage assigns 'framed rights' to determine play in the second stage. This design allows us to explore how these treatments affect coordination and efficiency in the BOS compared to other treatments and to a standard one-stage game. In all treatments, subjects play the two-stage BOS for 60 rounds with the same partner, there is no private information and instructions are common knowledge. In the first stage of the game players resolve the order of play by making an announcement about whether they intend to move first in the second stage BOS game.

In the Baseline (hereafter, BL) treatment no specific rights are enumerated: both subjects are told: "The first decision is whether you want to choose first or second in the second decision." If the first (second) player chooses to move first and the second (first) does not, then the game is played sequentially with the first (second) player moving first. If both players choose to move first, or neither chooses to move first, then the game is played simultaneously.

In the Have Rights (hereafter, HR) treatment, rights are specifically enumerated. Both players were told: "You and your counterpart each have the right to choose first in the second decision." In this case, if the first (second) player waives the right and the second (first) does not then the game is played sequentially with the second (first player) moving first. If both players waive the right, or neither player waives the right, then the game is played simultaneously.

In the final Asymmetric Rights (hereafter, AR) treatment, rights are enumerated differently for different players. The column player was told: "Your counterpart has been

randomly chosen to have the right to move first in the second decision. However, your counterpart can waive that right and you can claim it." The row player is given the opposite instructions - that they have the right to move first but can waive it, just as in the HR treatment. In the AR treatment, if the row player does not waive the right to move first, and the column player does not claim it, then the BOS game is played as a sequential game with the row player moving first. If the row player waives their right and the column player claims it then the BOS game is played as a sequential game with the column player moving first. If row does not waive and column claims, or row waives and column does not claim, then the BOS game is played simultaneously. The AR treatment allows us to comment on how outcomes and play are affected by an unequal rights assignment. Note, however, that all of the BL, HR, and AR treatments are strategically identical, differing only by the frame. Within each treatment, the enumeration of rights (or lack thereof) is common knowledge: each player knows the rights enumerated to the other player, and knows that the other player has this information, and so on.

3.3 Hypotheses

In our BOS game, earnings are low when subjects fail to coordinate and are high when they succeed. Since coordination in BOS games is more likely if players move sequentially, much of our analysis focuses on levels of coordination. Across treatments, a pair of subjects, or dyad, is said to *coordinate in the first stage* if it results in the second stage of the game being played sequentially. This means that exactly one participant in a pair expresses an interest to move first in the subsequent BOS game. A dyad is said to *coordinate in the second stage* if, regardless of whether the BOS is played simultaneously

or sequentially, one of the two pure strategy equilibria identified in the single shot game is chosen. A dyad *coordinates in both stages* if they coordinate in the first stage *and* they coordinate in the second stage.

The thrust of our hypotheses are straightforward: conventional game theory would suggest no treatment effects on any dimension.[5] Insofar as there are "entitlement effects" given rights frames, alternate hypotheses investigate the possibility of rights, frames and entitlements affecting coordination levels and/or paths to coordination.

Our null hypothesis is that framing does not matter and should have no effect on coordination or resulting dyadic payoffs in any stage when compared across treatments. We expect, however, to observe higher levels of stage one coordination in our BL treatment (in which subjects were not told they had a 'right to move first' but could claim it) versus our HR treatment (in which subjects were told they did have 'right to move first' but could waive it).

Hypothesis 1: Higher levels of stage one coordination in the BL vs HR treatment

This would occur because people are less likely to give up something they have than to claim something they do not have. While this result is not suggested by conventional game theory, extant research on the disparity between willingness to accept and willingness to pay suggests that people's reservation for selling an item exceeds their reservation value for buying an item (Coursey et al., 1987). If having a right changes the

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[5] It is possible to observe a number of dynamic behavioral patterns in our data. For example, individuals often share the proceeds of cooperating in the BOS over time by choosing one another's preferred coordination outcomes in alternate rounds. Such 'turn-taking' behavior (conjectured by Luce and Raiffa (1957) formalized by Lau and Mui (2008), and observed experimentally by Duffy, Lai and Lim (2017)) exists in all treatments, but to varying extents across treatments. We omit a description of this behavior for the sake of brevity.

value of that right in a way similar to setting a reservation price for selling in the study of reservation values, we should expect subjects in the HR treatment to be more resistant to allowing their counterpart to go first in stage 2. Alternatively, having rights may make subjects feel 'entitled' thereby affecting cooperation levels in both stages, a notion that we explore in the sections below (see Hoffman and Spitzer, 1985).

Hypothesis 2: Higher levels of stage two coordination and greater earnings in the BL vs HR treatment

This is a natural consequence of the first hypothesis. While stage two coordination is unlikely to vary in rounds when players fail to coordinate in stage one, we expect to see overall stage two cooperation to increase. The earnings component of the hypothesis is a consequence of increased coordination.

Hypothesis 3: No treatment effects with respect to overall coordination or earnings.

We expect that there will be no "stickiness" in patterns of play, *across treatments*, irrespective of whether a dyad plays a BOS sequentially or simultaneously (itself a result of stage one interaction within a round). That is, behavior across treatments in any given period should not be related to behavior in any previous period irrespective of whether the interaction is sequential or simultaneous.

Finally, we turn to pro-social behavior, where an individual gives up some of their own earnings to benefit their counterpart.

Hypothesis 4: More pro-social behavior in the BL treatment.

One form that pro-social behavior might take is "I go first but we coordinate on your preferred outcome." This behavior could occur in any treatment, so a null hypothesis is

that pro-social behavior is equal across treatments. If it is the case that participants are sensitive to entitlements, however, then more pro-social behavior will be observed in the BL treatment where no player feels they have an entitlement.

3.4 Procedure

Each treatment involved about 40 pairs of participants seated randomly at computer terminals in the CBEES laboratory at the University of Texas at Dallas or the Economics Research Lab at Virginia Tech. Prior to the start of data collection the research procedure was reviewed and approved by each university's Institutional Review Board that monitors research on human subjects. All subjects provided informed consent prior to participating. The experiment was computerized, participants read through self-paced instructions, and decisions were made using the computer keyboard (using z-tree; Fischbacher, 2007). The instructions explained the game, and the process used to decide the order of moves.

Participants' earnings were summed and, along with a $5 show-up fee, were paid privately, in cash, at the end of the experiment. Average earnings were $26 including the show-up fee. The experiments lasted approximately one hour. A minimum detectable effect calculation at 80% power suggested each treatment to have approximately 25 pairs of subjects. There were 39 pairs in the BL treatment, 41 in the HR treatment and 41 pairs in the AR treatment. The instructions included a quiz to measure understanding on the part of the participants, and all participants correctly responded before the experiment began.

In all treatments, roles and anonymous partners were randomly assigned at the beginning of the experiment, and remained constant across the 60 rounds. Participants simultaneously decided about claiming or waiving rights in the first stage of a round, these decisions were then matched and the game was played sequentially or simultaneously as appropriate in the second stage. Subjects learned the outcome of each round at its end, and the history of play was available to participants.

4. Results

We evaluate the data by looking at how framing affects first stage decisions about how to play the BOS game, earnings and coordination in the BOS game, and observed pro-social behavior and its' persistence over time. In our analysis, dyads are indexed by i, periods by t and we define a number of variables that describe types of coordination and prosocial behavior. A dyad is said to *coordinate (or not) in the first stage* of period t if players' decisions in this stage result in the second stage BOS game being played sequentially ($First\ Stage_{it} = F_{it} = 1\ or\ 0$). A dyad is said to *coordinate (or not) in the second stage* of period t if one of the two pure strategy equilibria to the BOS game are chosen ($Second\ Stage_{it} = S_{it} = 1\ or\ 0$). A dyad *coordinates in both stages* of period t if they coordinate in both stages ($Both\ Stages_{it} = B_{it} = 1\ if\ F_{it} = 1\ and\ S_{it} = 1$) otherwise $B_{it} = 0$. Earnings ($Earnings_{it} = E_{it}$) are measured as a continuous variable in experimental dollars.

Next, we say that pro-social behavior occurs when the first mover gives up his own earnings to allow the second mover to earn more, that is, he defers to the second mover and takes the action that allows her to have her preferred outcome in the BOS game.

Thus, a dyad is pro-social in period t if the outcome of the first period choices results in sequential play, and the second stage outcome is the non-subgame perfect equilibrium to the BOS ($ProSocial_{it} = P_{it} = 1\ or\ 0$). Using the example from Table 1 to illustrate, suppose that, based on decisions made in the first stage, the Column player moves first and the Row player moves second in the second stage. This dyad behaves pro-socially if the Column player chooses Opera even though she prefers the (fight, fight) outcome, and *then* the Row player chooses Opera. Given the payoffs used in our experiment, this leads to an outcome where Column earns only 3 while Row earns 4.

4.1 Overall Coordination and Earnings across Treatments

Our data takes a panel structure in each treatment (dyads observed through time), and we conducted two sets of formal tests of any treatment differences in first, second or both stage coordination rates, in addition to earnings.

First we averaged across dyads for each period and conducted two sided Wilcoxon non-parametric tests on three coordination variables across treatments (see Figure 1). With respect to coordination in the first stage, we find a significant difference across the AR and HR treatments (z = 2.292, p-value of 0.0219) and the AR and BL treatments (z = 2.929, p-value of 0.0034). With respect to coordination in the second stage we found a difference across the AR and HR treatments (z = 2.683, p-value of 0.0073). Finally, with respect to coordination in both stages we found differences between the AR and HR treatments (z = 2.303, p-value of 0.0213) and the AR and BL treatments (z = 3.034, p-value of 0.0024).

We next conducted non-parametric tests across the three treatments for the three variables *without* averaging across dyads. While the pattern of results with respect to coordination in the first stage was similar to the results with dyad-averaged data, with respect to coordination in the second stage we found significant differences. Specifically, in comparing the BL and HR treatments, coordination in the second stage was significantly different (z = 2.500, p-value of 0.0124). The same held when comparing the AR and HR treatments (z = 4.474, p-value of 0.000) and the AR and BL treatments (z = 1.996, p-value of 0.0459). Coordination in both stages using non-averaged data followed the same pattern as that exhibited by the dyad-averaged data described above.
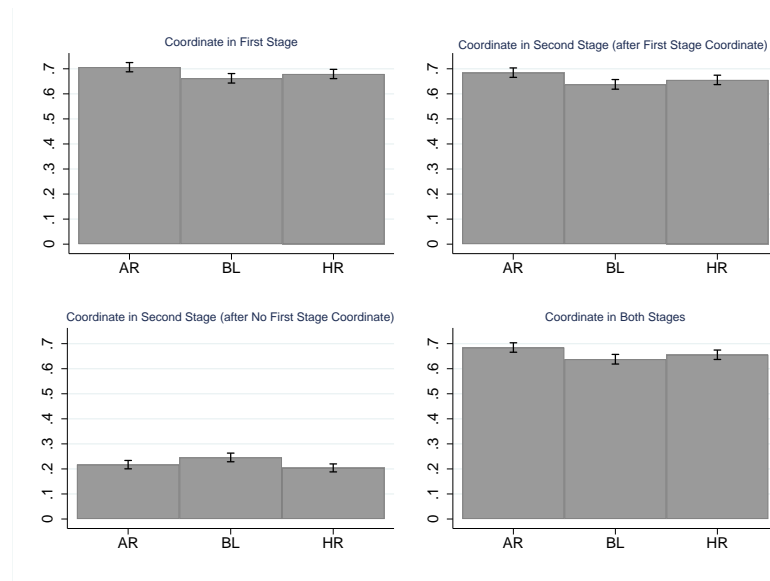
Figure 1. Coordination across Treatments (with 95% C.I.)

With respect to earnings (see Figure 2), when employing data averaged across dyads within a period, we observe a significant difference only across the AR and HR treatments (z = 2.683, p-value of 0.0073). Using data on earnings that are *not* averaged across dyads, however, results in significant differences across the BL and HR treatments

(z = 2.500, p-value of 0.0124), the AR and HR treatments (z = 4.474, p-value of 0.0000) and also the AR and BL treatments (z = 1.996, p-value of 0.0459).
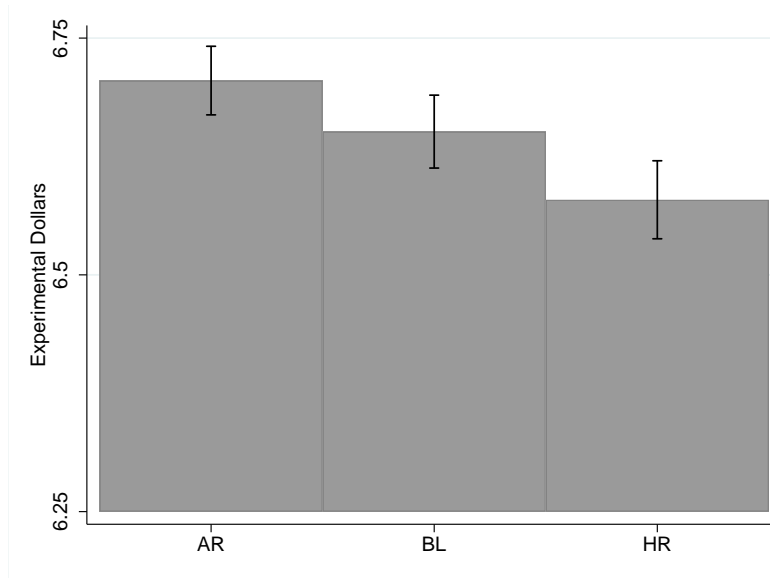
Figure 2. Average Earnings across Treatments (with 95% C.I.)

Next, we investigate treatment differences for outcomes with OLS regressions. Each column of Table 2 corresponds to a dependent variable regressed on dummy variables controlling for treatment, with the omitted category being the BL treatment.[6] Table 2 reports two sets of regressions, the first set (columns 2-5, labeled "Regressions across Groups and Time") employ all data across groups (dyads) and time (periods). Here, we find that the HR (AR) treatments decrease (increase) coordination and earnings. The second set of regressions in Table 2 (columns 6-9, labeled "Regressions across Time") employ data averaged across groups within a period. Doing so results in a time series for

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[6] We estimated the regression specifications using panel techniques as well. The log-likelihoods (and R^2) of the regressions suggested a better fit with pooled data.

each treatment in which coordination in the first, second and both stages are proportions

(used in OLS estimation).[7]

Table 2. Regression Results

Dep. Var.	Regressions across Groups and Time				Regressions across Time			
	Coord. in the First Stage	Coord. in the Second Stage	Coord. In Both Stages	Earnings	Coord. in the First Stage	Coord. in the Second Stage	Coord. In Both Stages	Earnings
HR	0.0783	-0.219**	0.078	-0.072***	0.017	-0.024**	0.018	-0.072**
	-0.0613	-0.087	-0.06	-0.028	-0.012	-0.001	-0.011	-0.029
AR	0.207***	0.191**	0.210***	0.054**	0.044***	0.018**	0.047***	0.054**
	-0.0628	-0.095	-0.062	-0.027	-0.012	-0.001	-0.012	-0.027
t	0.00930***	0.0248***	0.010***	0.007***	0.002***	0.002***	0.002***	0.007***
	-0.00149	-0.00226	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
Constant	0.393***	1.342***	0.259***	6.422***	0.601***	0.808***	0.568***	6.423***
	-0.0613	-0.0843	-0.0603	-0.03	-0.013	-0.011	-0.013	-0.032
LogL/R^2	-4475.01	-2545.79	-4588.45	0.021	0.284	0.46	0.348	0.46

Note: *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

We observe from Table 2 that coordination in the second stage is reduced in the HR

treatment relative to the BL treatment, while increased in the AR treatment relative to

the BL treatment.

The main results from the above non-parametric tests and regressions are as

follows:

Result 1: No difference in coordination in the first stage between BL and HR. AR,

however, leads to significantly more coordination than BL.

Result 2: Framing of rights leads to less coordination in second-stage play and lower

earnings within a dyad when rights are *positively* enumerated (HR) than when they are

unenumerated (BL).

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[7] In addition to the specifications reported in Table 2, we estimated variations with no qualitative change in results. For example, the inclusion of a nonlinear time trend (e.g. t^2) did not change the results significantly.

We now turn to results on Hypothesis 3 concerning "stickiness" of play across treatments. We exploit the fixed-pairings, repeated-play feature of our experimental design by running a series of dynamic random effects logistic regressions which incorporate a lagged dependent variable in order to examine any persistence, or "stickiness", in behavior across treatments.[8] We first investigated the determinants of simultaneous play, reported in Table 3 below.

Table 3. Dynamics of Simultaneous Second Stage Play

Dep. Var.:	Simultaneous_t
$\text{Simultaneous}_{t-1}$	0.238**
	(0.118)
$\text{Simultaneous}_{t-1} \times$ HR	0.528***
	(0.173)
$\text{Simultaneous}_{t-1} \times$ AR	0.261
	(0.168)
t	-0.006**
	(0.003)
$t \times$ HR	-0.008*
	(0.004)
$t \times$ AR	-0.012***
	(0.004)
Constant	-1.119***
	(0.192)
$\ln(\sigma_v^2)$	1.298***
	(0.157)
LogL	-3103.50

Note: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. The estimate of $\ln(\sigma_v^2)$ measures the variance attributable to individual variation in a panel. Simultaneous_t = 1 if a second-stage play was simultaneous for a dyad in period t. The benchmark situation, captured by the Constant, is 'sequential play last period, BL treatment.'

---

[8] Let C_{it} be the dependent variable of interest, where $C_{it} \in \{0,1\}$, i indicates group, and t indicates period. Specifically, we regress C_{it} on C_{it-1} and a set of other explanatory variables as,

$$C_{it} = \alpha + \beta C_{it-1} + \gamma X_{it} + \varepsilon_{it}$$

where the random effects assumption is captured by

$$\varepsilon_{it} = \lambda_i + \delta_t + \xi_{it}, \quad \xi_{it} \sim f(0, \sigma^2)$$

We found a decreasing likelihood of simultaneous play over time, but particularly significantly for the AR and HR treatments. Moreover, simultaneous play in the previous period was a significant determinant of simultaneous play in period t, with this effect being significantly stronger under HR than BL. Effectively, first-stage non-coordination (i.e. playing simultaneously) in the previous period is positively associated with first-stage non-coordination in this period, for all treatments. This effect is significantly stronger under HR than BL, but not significantly stronger under AR than BL.

A complementary regression for sequential second-stage play is given in Table 4. Estimated coefficients have the expected signs; again the interaction term on the lagged variable is significantly stronger for the HR treatment.

Table 4. Dynamics of Sequential Second Stage Play

Dep. Var.:	Sequential$_t$
Sequential$_{t-1}$	0.251**
	(0.116)
Sequential$_{t-1}$ × HR	0.501***
	(0.170)
Sequential$_{t-1}$ × AR	0.248
	(0.166)
t	0.007**
	(0.003)
t×HR	0.006
	(0.004)
t×AR	0.011**
	(0.004)
Constant	0.618***
	(0.196)
$\ln(\sigma_v^2)$	1.306***
	(0.157)
LogL	-3103.84

Note: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. The estimate of $\ln(\sigma_v^2)$ measures the variance attributable to individual variation in a panel. Sequential$_t$ = 1 if a second-stage play was sequential for a dyad in period t. The benchmark situation, captured by the Constant, is 'simultaneous play last period, BL treatment.'

Effectively, first-stage coordination (i.e. playing sequentially) in the previous period is positively associated with first-stage coordination in this period, for all treatments. This "stickiness" effect is significantly stronger under HR than BL, but not significantly stronger under AR than BL. In summary,

Result 3: Enumerating rights (HR) leads to more persistence in behavior than when rights are unenumerated (BL).

4.2 Pro-social Behavior and the Enumeration of Rights

Figure 3 below depicts the observed frequencies of three different paths by which participants reached second stage coordination outcomes grouped by treatment.
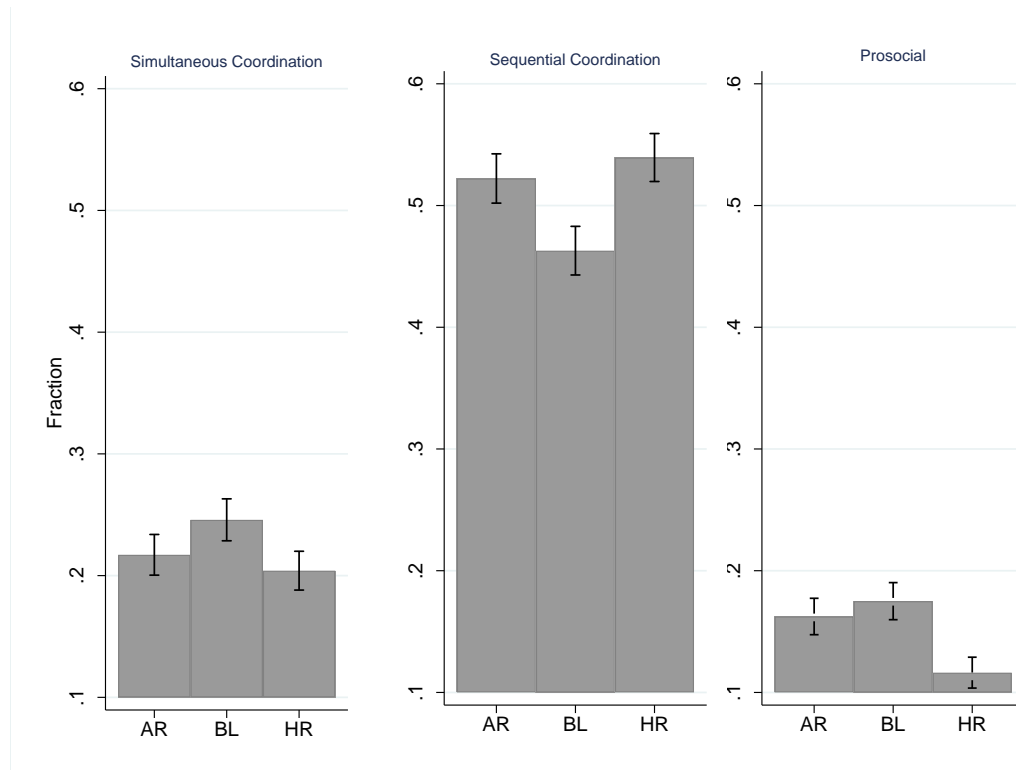
Figure 3. Paths of Play to Second-Stage Coordination across Treatments (with 95% C.I.)

From left to right, the first panel of Figure 3 represents the frequency of simultaneous coordination outcomes (by treatment); that is, those cases where dyads achieve coordination when they chose simultaneously in the second stage. The frequency of simultaneous coordination did not differ across treatments. As noted above, sequential coordination can occur on either the first-mover's preferred outcome (as predicted by standard game theory) or the second-mover's preferred outcome (the pro-social case). The second panel of Figure 3 illustrates the frequency of sequential coordination outcomes, *net* of pro-social outcomes; that is, those cases where play is sequential and the dyad coordinates on the first-mover's preferred outcome. This subset of sequential coordination was lowest in the BL treatment (middle panel of Figure 3). The third panel of the Figure shows the frequency of pro-social outcomes by treatment.

Wilcoxon non-parametric test results across treatments found that prosocial behavior differed across treatments. Using data averaged across dyads for each round, we find significant differences across BL and HR (z = 7.236, p-value of 0.0000) and AR and HR (z = 4.834, p-value of 0.0000). Using data directly (without averaging dyads within a round) we find differences across the BL and HR treatments (z = 5.810, p-value of 0.0000), across the AR and HR treatments (z = 4.621, p-value of 0.0000) but not across the AR and BL treatments (z = 1.158, p-value of 0.2467).

These tests reveal treatment differences in the prevalence of pro-social behavior, but we also found that such behavior is related to earnings. Specifically, we found that those dyads displaying pro-social behavior in earlier rounds of the experiment earned more money overall than dyads which did not. While it's not clear if dyads just chanced

upon pro-social behavior or not, we measured this effect nonetheless with the variable Early PS, which takes a value of 1 if a dyad had at least one pro-social outcome in the first 5 periods of play (and 0 otherwise). The impact of this variable on dyadic earnings is reported in Table 5 below.

Table 5. Regressions for Earnings and Pro-Social Effects

Dep. Var.	E_{it}
HR	-0.083**
	(0.036)
AR	0.016
	(0.037)
Early PS	0.174***
	(0.039)
Early PS $\times$ HR	0.054
	(0.055)
Early PS $\times$ AR	0.108*
	(0.056)
t	0.007***
	(0.001)
Constant	6.344***
	(0.033)
R^2	0.035

Note: *** p<0.01, ** p<0.05, * p<0.1.

Table 5 shows that the positive enumeration of rights in the HR treatment reduces earnings but not for those who engage in pro-social behavior early on in a pairing.

Our main takeaway from the above non-parametric tests and regression analyses is that dyads are less pro-social when rights are positively enumerated as in the HR treatment. HR treatment dyads also show lower earnings. However, when accounting for whether a dyad interacts in a pro-social manner early on or not, we see earnings rise in dyads with episodes of early pro-social behavior. This observation motivates our next set

of analyses into the possible persistence of pro-social behavior and its relationship to treatment differences.

Having examined treatment differences in persistence across sequential and simultaneous first stage coordination as part of our first hypothesis, we now turn towards observed persistence in pro-social outcomes which obtain as a subset of sequential play (Table 6).

Table 6. Persistence in Pro-Social Outcomes

Dep. Var.:	Pro-Social$_t$
Pro-Social$_{t-1}$	-4.463***
	(0.314)
Pro-Social$_{t-1}$ × HR	2.497***
	(0.378)
Pro-Social$_{t-1}$ × AR	1.311***
	(0.381)
t	-0.016**
	(0.006)
t×HR	-0.025***
	(0.008)
t×AR	-0.003
	(0.007)
Constant	-4.420***
	(0.389)
$\ln(\sigma_v^2)$	2.956***
	(0.188)
LogL	-1429.86

Note: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. The estimate of $\ln(\sigma_v^2)$ measures the variance attributable to individual variation in a panel.

Table 6 above presents dynamic logistic panel regressions to investigate whether pro-social outcomes precede one another sequentially. The benchmark case is "BL Treatment, no pro-social outcome last period." Here we see that a pro-social outcome in the period preceding is a negative predictor of a pro-social outcome this period. This (negative) effect is significantly weaker for both the HR and AR treatments relative to BL.

Overall, pro-social outcomes decline over time, with this effect being stronger for HR relative to BL treatments. That is, given the data described in Figure 1 and the subsequent tests and regressions, we find that under positively enumerated rights (the HR treatment) there are fewer episodes of pro-social behavior, but those episodes are more persistent than in other treatments (Table 6). Overall, we find:

Result 4:   Dyad behavior is relatively more persistent when rights are positively enumerated, in terms of simultaneous play, sequential play, and pro-sociality.

We note, however, that positive enumeration is only desirable if the starting point behavior of a dyad is pro-social to begin with, so this is a mixed result with regard to constitution design.

5. Conclusion

The issue of enumeration of rights in a society periodically resurfaces in policy debates, particularly in emerging nation-states (Selassie (2003), Gluck and Ballou (2014)). We develop an experimental Battle of the Sexes environment to explore how enumerating rights affects advantageous coordination and pro-social behavior. Our design implements "framed" rights that give rise to potential entitlement effects. We find evidence that actively specifying rights tends to reduce coordination levels and that pro-social behavior is influenced by such "psychological rights frames." These effects hold even though pure game-theoretic considerations predict no differences across our experimental treatments.

Our results can help to inform the problem of constitutional design by demonstrating how the distribution of assigned rights affects efficiency in two person

interactions. Constitutions can be thought of as coordinating devices which help guide society to certain desirable equilibria (Ordeshook, 2002). A central theme in our findings is that differential framing of rights can affect the ways in which coordination occurs or does not. In particular, we observe that equal and positively enumerated rights are associated with less pro-social behavior, as characterized by individuals seeking to coordinate to the benefit of others. The unintended consequence of positively specifying rights may therefore be to "crowd out" citizens' tendency to be pro-social, an outcome supportive of Frey's (1997) concept of civic virtue. Given our finding that pro-social behavior is linked with greater earnings and efficiency, this observation implies that more enumerated rights may not always be better.

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ONLINE APPENDIX

Enumerating Rights: More is Not Always Better

July 5, 2019

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Baseline Treatment Screenshots

Welcome to the

Center for Behavioral and Experimental Economic Science

You are now participating in a session of an Economic Decision-Making Experiment.

Please press CONTINUE to go to the instructions.

CONTINUE

In this session, you will be randomly and anonymously matched with a counterpart who is another participant in this room. Your earnings from the session will depend on the decisions both you and your counterpart make. These earnings will be paid to you at the end of the session, in addition to your show-up fee. The dollar amounts in these decisions are experimental dollars. At the end of the session, you will be paid $ 1.00 US dollar for every $ 4.00 experimental dollars earned. You will never know who your counterpart is, nor will they ever know your identity. All the decisions you make in this session will remain anonymous.

Please do not talk, exclaim, or otherwise communicate with the other participants during the session. Interactions with your counterpart will take place through the computer program. If you have a question, please raise your hand and a monitor will come to you to answer your question privately. Any participants violating these rules will be asked to leave the session, and will forfeit their earnings.

You and your counterpart will be interacting for 3 rounds. You will each make two decisions in each round. We will begin by describing the **second** of these decisions.

To continue with the instructions, please press CONTINUE.

CONTINUE

In the **second** decision for each round, you will be choosing between one of two columns (left/right), and your counterpart will be choosing between one of two rows (up/down). Throughout the entire session you will always be choosing between columns, and your counterpart will always be choosing between rows.

Together, the choices you make will determine your earnings for each round. These earnings are shown in the table below.

		COLUMN	
		LEFT	RIGHT
ROW	UP	Row earns $4 Column earns $3	Row earns $2 Column earns $2
	DOWN	Row earns $2 Column earns $2	Row earns $3 Column earns $4

To make sure you understand the choices and resulting outcomes, please fill in the quiz below.

1) If Row chooses Up and Column chooses Left, then Row earns $ [   ]   1) Column earns $ [   ]

2) If Row chooses Up and Column chooses Right, then Row earns $ [   ]   2) Column earns $ [   ]

3) If Row chooses Down and Column chooses Left, then Row earns $ [   ]   3) Column earns $ [   ]

4) If Row chooses Down and Column chooses Right, then Row earns $ [   ]   4) Column earns $ [   ]

Please press CONFIRM to submit your answers and continue with the instructions.

CONFIRM

4

To summarize, the **second** decision you and your counterpart will make in each round will be the choice between columns for you, and rows for your counterpart.

To continue with the instructions, please press CONTINUE.

CONTINUE

		COLUMN	
		LEFT	RIGHT
ROW	UP	Row earns $4 Column earns $3	Row earns $2 Column earns $2
	DOWN	Row earns $2 Column earns $2	Row earns $3 Column earns $4

The **first** decision you and your counterpart will make in each round will be whether you would like to choose first or second in the second decision.

If you choose first in the second decision, you first choose the column, then your counterpart will be informed of your choice, and then they will choose the row.

If your counterpart chooses first in the second decision, they first choose the row, then you will be informed of their choice, and then you will choose the column. The earnings in the table are the same regardless of who chooses first.

You and your counterpart will each (independently) decide whether you would like to choose first or second.

If both you and your counterpart decide on the same outcome (you both decide to choose first or you both decide to choose second), then you both make your row and column choices at the same time (without knowing what the other has chosen when you make your choice).

If you decide to choose first and your counterpart decides to choose second, then you choose first and they choose second. If your counterpart decides to choose first and you decide to choose second, then they choose first and you choose second.

To continue with the instructions, please press CONTINUE.

CONTINUE

To make sure you understand the decisions and resulting outcomes, please answer the quiz below.

1) If Row decides to choose first and Column decides to choose second, then in the second decision:
   - ○ Row chooses first and Column chooses second
   - ○ Row chooses second and Column chooses first
   - ○ Both choose at the same time

2) If Row decides to choose second and Column decides to choose first, then in the second decision:
   - ○ Row chooses first and Column chooses second
   - ○ Row chooses second and Column chooses first
   - ○ Both choose at the same time

3) If Row decides to choose first and Column decides to choose first, then in the second decision:
   - ○ Row chooses first and Column chooses second
   - ○ Row chooses second and Column chooses first
   - ○ Both choose at the same time

4) If Row decides to choose second and Column decides to choose second, then in the second decision:
   - ○ Row chooses first and Column chooses second
   - ○ Row chooses second and Column chooses first
   - ○ Both choose at the same time

Please press CONFIRM to submit your answers and continue with the instructions.

[CONFIRM]

To summarize, the first decision you and your counterpart will make in each round will be whether you want to choose first (in the second decision) or choose second (in the second decision).

To continue with the instructions, please press CONTINUE.

CONTINUE

		COLUMN	
		LEFT	RIGHT
ROW	UP	Row earns $4 Column earns $3	Row earns $2 Column earns $2
	DOWN	Row earns $2 Column earns $2	Row earns $3 Column earns $4

Overall Summary

You have been randomly matched with an anonymous counterpart in this room. You and your counterpart will interact for 3 rounds. In each round, you and your counterpart will each make two decisions.

The first decision is whether you want to choose first or second in the second decision. The second decision is which column you will choose (and which row your counterpart will choose) in the matrix above. These choices will determine your (and your counterpart's) earnings.

In each round you will input your two decisions into the computer program. You may be asked to wait until your counterpart has made their decisions. After each decision you will learn what your counterpart has decided, and will move on to the next decision or the next round. The matrix above will be printed on each screen as a reminder. You can select the DISPLAY HISTORY check box at any time to see a history of your and your counterpart's decisions, and the resulting earnings.

If you have a question, please raise your hand and a monitor will come to you to answer your question privately.

Please press [START] when you are ready to make your first decision.

☐ Display History

		COLUMN	
		LEFT	RIGHT
ROW	UP	Row earns $4 Column earns $3	Row earns $2 Column earns $2
	DOWN	Row earns $2 Column earns $2	Row earns $3 Column earns $4

Would you like to choose FIRST or SECOND in the second decision ?

○ Choose First
○ Choose Second

Please press CONFIRM to submit your decision.

[CONFIRM]

10

Please wait while your counterpart is making their first decision.

☐ Display History

Your first decision was to choose **FIRST** in the second decision.

Your counterpart's first decision was to choose **SECOND** in the second decision.

Because you decided to choose first and your counterpart decided to choose second, you will first choose your row, and then they will choose their column.

Please press CONTINUE when you are ready to continue.

[CONTINUE]

☐ Display History

Your first decision was to choose **SECOND** in the second decision.

Your counterpart's first decision was to choose **FIRST** in the second decision.

Because your counterpart decided to choose first and you decided to choose second, your counterpart will first choose their row, and then you will choose your column.

Please press CONTINUE when you are ready to continue.

[CONTINUE]

Please wait while your counterpart is making their second decision.

☐ Display History

Please make your choice by checking one of the boxes in the row headings (UP or DOWN).

		COLUMN	
		LEFT	RIGHT
ROW	☐ UP	Row earns $4 Column earns $3	Row earns $2 Column earns $2
	☐ DOWN	Row earns $2 Column earns $2	Row earns $3 Column earns $4

Please press CONFIRM to submit your choice.

[CONFIRM]

15

☐ Display History

RESULTS

You chose : RIGHT   Your counterpart chose : UP

You earned : $ 2   Your counterpart earned : $ 2

		COLUMN	
		☐ LEFT	☑ RIGHT
ROW	☑ UP	~~Row earns $4~~ ~~Column earns $3~~	**Row earns $2** **Column earns $2**
	☐ DOWN	~~Row earns $2~~ ~~Column earns $2~~	~~Row earns $3~~ ~~Column earns $4~~

Please press CONTINUE when you are ready to continue.

CONTINUE

17

☑ Display History

Round	You decided	Counterpart decided	You chose	Counterpart chose	You earned	Counterpart earned
1	Second	First	Right	Up	2	2
2	First	First	Left	Up	3	4
3	Second	First	Right	Down	4	3

RESULTS

You chose : RIGHT   Your counterpart chose : DOWN

You earned : $ 4   Your counterpart earned : $ 3

		COLUMN	
		☐ LEFT	☑ RIGHT
ROW	☐ UP	~~Row earns $4~~ ~~Column earns $3~~	~~Row earns $2~~ ~~Column earns $2~~
	☑ DOWN	~~Row earns $2~~ ~~Column earns $2~~	Row earns $3 Column earns $4

Please press CONTINUE when you are ready to continue.

CONTINUE

Please wait. The next round will start shortly.

SURVEY

01)   How old are you ?

[|]

02)   What class are you in ?

- ○ Freshmen
- ○ Sophmore
- ○ Junior
- ○ Senior
- ○ Graduate Student
- ○ Not a Student

03)   What is your ethnicity ?

- ○ White / Caucasian
- ○ African American/Black
- ○ Hispanic
- ○ Asian
- ○ Other / Do not wish to reveal

04)   What is your sex ?

- ○ Male
- ○ Female

05)   What is your employment status ?

- ○ Not Working
- ○ Temporary Job
- ○ Permanent Job less than 30 hours per week
- ○ Permanent Job more than 30 hours per week

06)   How often do you attend religious services ?

- ○ More than once a week
- ○ Once a week
- ○ At least once a month
- ○ Less than once a month
- ○ Never

Please press CONFIRM to submit your answers and continue with the survey.

[CONFIRM]

20

SURVEY

07) Are you a member of a sorority or fratenity ?

○ Yes
○ No

08) Do you think that most people would try to take advantage of you if they got a chance, or would they try to be fair ?

1 ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ 10
People would try   People would try
to take advantage   to be fair

09) Generally speaking, would you say that most people can be trusted, or that you need to be very careful in dealing with people ?

1 ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ 10
You need to be very   Most people can
careful in dealing   be trusted
with people

10) Some people believe that individuals can decide their own destiny, while others think that it is impossible to escape a predetermined fate. What comes closest to your view on the scale below ?

1 ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ 10
Everything is   People shape their
determined by fate   fate themselves

11) How much of the time do people get what they deserve in life ?

○ Always
○ Most of the time
○ About half the time
○ Once in while
○ Never

Please press CONFIRM to submit your answers and continue with the survey.

[CONFIRM]

21

S U R V E Y

12) Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale to indicate how much freedom of choice and control you feel you have over they way your life turns out.

1 ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ 10
No choice   A great deal
at all   of choice

13) Are you, generally speaking, a person who is fully prepared to take risks, or do you try to avoid taking risks ?

1 ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ 10
Avoid Risks   Prepared for
                               Risk

14) In general, your health is :

○ Excellent
○ Very good
○ Good
○ Fair
○ Poor

15) How many people in this session do you recognize ?

16) How many would you consider friends ?

Please press CONFIRM to submit your answers.

CONFIRM

Thank you for your participation.

Your earnings in this session were $2.25, plus your show-up fee.

Please wait until the number on your partition is called, then collect your belongings and come to the check-in desk to receive your payment.

Have Rights Treatment Screenshots

In this session, you will be randomly and anonymously matched with a counterpart who is another participant in this room. Your earnings from the session will depend on the decisions both you and your counterpart make. These earnings will be paid to you at the end of the session, in addition to your show-up fee. The dollar amounts in these decisions are experimental dollars. At the end of the session, you will be paid $ 1.00 US dollar for every $ 4.00 experimental dollars earned. You will never know who your counterpart is, nor will they ever know your identity. All the decisions you make in this session will remain anonymous.

Please do not talk, exclaim, or otherwise communicate with the other participants during the session. Interactions with your counterpart will take place through the computer program. If you have a question, please raise your hand and a monitor will come to you to answer your question privately. Any participants violating these rules will be asked to leave the session, and will forfeit their earnings.

You and your counterpart will be interacting for 3 rounds. You will each make two decisions in each round. We will begin by describing the **second** of these decisions.

To continue with the instructions, please press CONTINUE.

CONTINUE

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In the **second** decision for each round, you will be choosing between one of two columns (left/right), and your counterpart will be choosing between one of two rows (up/down). Throughout the entire session you will always be choosing between columns, and your counterpart will always be choosing between rows.

Together, the choices you make will determine your earnings for each round. These earnings are shown in the table below.

		COLUMN	
		LEFT	RIGHT
ROW	UP	Row earns $4 Column earns $3	Row earns $2 Column earns $2
	DOWN	Row earns $2 Column earns $2	Row earns $3 Column earns $4

To make sure you understand the choices and resulting outcomes, please fill in the quiz below.

1) If Row chooses Up and Column chooses Left, then Row earns $ [   ]   1) Column earns $ [   ]

2) If Row chooses Up and Column chooses Right, then Row earns $ [   ]   2) Column earns $ [   ]

3) If Row chooses Down and Column chooses Left, then Row earns $ [   ]   3) Column earns $ [   ]

4) If Row chooses Down and Column chooses Right, then Row earns $ [   ]   4) Column earns $ [   ]

Please press CONFIRM to submit your answers and continue with the instructions.

[CONFIRM]

To summarize, the **second** decision you and your counterpart will make in each round will be the choice between columns for you, and rows for your counterpart.

To continue with the instructions, please press CONTINUE.

CONTINUE

		COLUMN	
		LEFT	RIGHT
ROW	UP	Row earns $4 Column earns $3	Row earns $2 Column earns $2
	DOWN	Row earns $2 Column earns $2	Row earns $3 Column earns $4

You and your counterpart each have the right to choose first in the second decision.

The **first** decision you and your counterpart will make in each round will be whether you would like to keep the right to choose first in the second decision, or waive that right and choose second in the second decision.

If you choose first in the second decision, you first choose the column, then your counterpart will be informed of your choice, and then they will choose the row.

If your counterpart chooses first in the second decision, they first choose the row, then you will be informed of their choice, and then you will choose the column. The earnings in the table are the same regardless of who chooses first.

You and your counterpart will each (independently) decide whether you would like to keep the right to choose first in the second decision, or waive that right and choose second.

If both you and your counterpart decide on the same outcome (you both decide to keep the right to choose first or you both decide to waive that right and choose second), then you both make your row and column choices at the same time (without knowing what the other has chosen when you make your choice).

If you keep the right to choose first and your counterpart waives the right, then you choose first and they choose second. If your counterpart keeps the right to choose first and you waive the right, then they choose first and you choose second.

To continue with the instructions, please press CONTINUE.

CONTINUE

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To make sure you understand the decisions and resulting outcomes, please answer the quiz below.

1) If Row keeps the right to choose first and Column waives the right to choose first, then in the second decision:

- ○ Row chooses first and Column chooses second
- ○ Row chooses second and Column chooses first
- ○ Both choose at the same time

2) If Row waives the right to choose first and Column keeps the right to choose first, then in the second decision:

- ○ Row chooses first and Column chooses second
- ○ Row chooses second and Column chooses first
- ○ Both choose at the same time

3) If Row keeps the right to choose first and Column keeps the right to choose first, then in the second decision:

- ○ Row chooses first and Column chooses second
- ○ Row chooses second and Column chooses first
- ○ Both choose at the same time

4) If Row waives the right to choose first and Column waives the right to choose first, then in the second decision:

- ○ Row chooses first and Column chooses second
- ○ Row chooses second and Column chooses first
- ○ Both choose at the same time

Please press CONFIRM to submit your answers and continue with the instructions.

CONFIRM

To summarize, the first decision you and your counterpart will make in each round will be whether you want to keep the right to choose first (in the second decision) or waive that right.

To continue with the instructions, please press CONTINUE.

CONTINUE

		COLUMN	
		LEFT	RIGHT
ROW	UP	Row earns $4 Column earns $3	Row earns $2 Column earns $2
	DOWN	Row earns $2 Column earns $2	Row earns $3 Column earns $4

Overall Summary

You have been randomly matched with an anonymous counterpart in this room. You and your counterpart will interact for 3 rounds. In each round, you and your counterpart will each make two decisions.

The first decision is whether you want to keep the right to choose first in the second decision, or waive that right. The second decision is which column you will choose (and which row your counterpart will choose) in the matrix above. These choices will determine your (and your counterpart's) earnings.

In each round you will input your two decisions into the computer program. You may be asked to wait until your counterpart has made their decisions. After each decision you will learn what your counterpart has decided, and will move on to the next decision or the next round. The matrix above will be printed on each screen as a reminder. You can select the DISPLAY HISTORY check box at any time to see a history of your and your counterpart's decisions, and the resulting earnings.

If you have a question, please raise your hand and a monitor will come to you to answer your question privately.

Please press **GO BACK** if you want to review these instructions again.

Please press **START** when you are ready to make your first decision.

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Asymmetric Rights Treatment Screenshots

In this session, you will be randomly and anonymously matched with a counterpart who is another participant in this room. Your earnings from the session will depend on the decisions both you and your counterpart make. These earnings will be paid to you at the end of the session, in addition to your show-up fee. The dollar amounts in these decisions are experimental dollars. At the end of the session, you will be paid $ 1.00 US dollar for every $ 4.00 experimental dollars earned. You will never know who your counterpart is, nor will they ever know your identity. All the decisions you make in this session will remain anonymous.

Please do not talk, exclaim, or otherwise communicate with the other participants during the session. Interactions with your counterpart will take place through the computer program. If you have a question, please raise your hand and a monitor will come to you to answer your question privately. Any participants violating these rules will be asked to leave the session, and will forfeit their earnings.

You and your counterpart will be interacting for 3 rounds. You will each make two decisions in each round. We will begin by describing the **second** of these decisions.

To continue with the instructions, please press CONTINUE.

CONTINUE

In the **second** decision for each round, you will be choosing between one of two columns (left/right), and your counterpart will be choosing between one of two rows (up/down). Throughout the entire session you will always be choosing between columns, and your counterpart will always be choosing between rows.

Together, the choices you make will determine your earnings for each round. These earnings are shown in the table below.

		COLUMN	
		LEFT	RIGHT
ROW	UP	Row earns $4 Column earns $3	Row earns $2 Column earns $2
	DOWN	Row earns $2 Column earns $2	Row earns $3 Column earns $4

To make sure you understand the choices and resulting outcomes, please fill in the quiz below.

1)   If Row chooses Up and Column chooses Left , then Row earns $ [ ]   1) Column earns $ [ ]

2)   If Row chooses Up and Column chooses Right, then Row earns $ [ ]   2) Column earns $ [ ]

3)   If Row chooses Down and Column chooses Left , then Row earns $ [ ]   3) Column earns $ [ ]

4)   If Row chooses Down and Column chooses Right, then Row earns $ [ ]   4) Column earns $ [ ]

Please press CONFIRM to submit your answers and continue with the instructions.

[CONFIRM]

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To summarize, the **second** decision you and your counterpart will make in each round will be the choice between columns for you, and rows for your counterpart.

To continue with the instructions, please press CONTINUE.

CONTINUE

		COLUMN	
		LEFT	**RIGHT**
ROW	**UP**	Row earns $4 Column earns $3	Row earns $2 Column earns $2
	DOWN	Row earns $2 Column earns $2	Row earns $3 Column earns $4

Your counterpart has been randomly chosen to have the right to choose first in the second decision. However, your counterpart can waive that right, and you can claim that right.

The **first** decision you and your counterpart will make in each round will be whether you would like to claim or they would like to waive the right to choose first in the second decision.

If you choose first in the second decision, you first choose the column, then your counterpart will be informed of your choice, and then they will choose the row.

If your counterpart chooses first in the second decision, they first choose the row, then you will be informed of their choice, and then you will choose the column. The earnings in the table are the same regardless of who chooses first.

You and your counterpart will each (independently) decide whether you would like to claim that right and whether they would like to waive that right.

If both you and your counterpart decide on the same outcome (one of you waives the right and the other does not claim it, or one of you does not waive the right and the other claims it), then you both make your row and column choices at the same time (without knowing what the other has chosen when you make your choice).

If you claim the right to choose first and your counterpart waives the right, then you choose first and they choose second. If your counterpart does not waive the right to choose first and you do not claim the right, then they choose first and you choose second.

To continue with the instructions, please press CONTINUE.

CONTINUE

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To make sure you understand the decisions and resulting outcomes, please answer the quiz below.

1) If Row does not waive the right to choose first and Column does not claim the right to choose first, then in the second decision:

      ○ Row chooses first and Column chooses second
      ○ Row chooses second and Column chooses first
      ○ Both choose at the same time

2) If Row waives the right to choose first and Column claims the right to choose first, then in the second decision:

      ○ Row chooses first and Column chooses second
      ○ Row chooses second and Column chooses first
      ○ Both choose at the same time

3) If Row does not waive the right to choose first and Column claims the right to choose first, then in the second decision:

      ○ Row chooses first and Column chooses second
      ○ Row chooses second and Column chooses first
      ○ Both choose at the same time

4) If Row waives the right to choose first and Column does not claim the right to choose first, then in the second decision:

      ○ Row chooses first and Column chooses second
      ○ Row chooses second and Column chooses first
      ○ Both choose at the same time

Please press CONFIRM to submit your answers and continue with the instructions.

[CONFIRM]

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To summarize, the first decision you and your counterpart will make in each round will be whether you would like to claim the right to choose first in the second decision and whether they would like to waive that right.

To continue with the instructions, please press CONTINUE.

CONTINUE

		COLUMN	
		LEFT	RIGHT
ROW	UP	Row earns $4 Column earns $3	Row earns $2 Column earns $2
	DOWN	Row earns $2 Column earns $2	Row earns $3 Column earns $4

Overall Summary

You have been randomly matched with an anonymous counterpart in this room. You and your counterpart will interact for 3 rounds. In each round, you and your counterpart will each make two decisions.

The first decision is whether you want to claim the right to choose first in the second decision, and whether your counterpart wants to waive the right to choose first in the second decision. The second decision is which column you will choose (and which row your counterpart will choose) in the matrix above. These choices will determine your (and your counterpart's) earnings.

In each round you will input your two decisions into the computer program. You may be asked to wait until your counterpart has made their decisions. After each decision you will learn what your counterpart has decided, and will move on to the next decision or the next round. The matrix above will be printed on each screen as a reminder. You can select the DISPLAY HISTORY check box at any time to see a history of your and your counterpart's decisions, and the resulting earnings.

If you have a question, please raise your hand and a monitor will come to you to answer your question privately.

Please press [START] when you are ready to make your first decision.

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