Online Appendix for "Durable Coalitions and Communication: Public versus Private Negotiations"

David P. Baron Renee Bowen Salvatore Nunnari

August 30, 2017

Appendix A: Alternative Definition of Allocation Types

In the text we define as "Dictatorial" allocations that give at least 50 tokens (that is, 83% of the tokens) to a single committee member; as "Universal" allocations that give at least 10 tokens (that is, 17% of the tokens) to every member of the committee; and as "Majoritarian" all other allocations. Here, we show that the results are robust to a different definition of Majoritarian and Universal allocations. In particular, we define as Dictatorial allocations that give at least 50 tokens (that is, 83% of the tokens) to a single member; as Universal allocations that give at least 15 tokens (that is, 25% of the tokens) to every member; and as Majoritarian allocations that give at least 20 tokens (that is, 33% of the tokens) to two members and less than 15 to the other. As we did for our original classification, in the latter two categories, we highlight allocations that give members an even number of tokens. For the Universal allocations, this correspond to the allocation (20, 20, 20); for the Majoritarian allocations, this includes all allocations of the form $[b, b, 60 - 2b]$ where $b \in (22, 30]$.

Allocation Type	**Baseline**	**Private**	**Public**
DICTATORIAL	1%	5%	1%
MAJORITARIAN	36%	58%†	7%†
Even	18%	40%†	4%†
Uneven	17%	18%	3%†
UNIVERSAL	56%	34%†	92%†
Even	49%	31%	90%†
Uneven	7%	4%	2%†
OTHER	7%	3%†	1%†
Observations	328	472	252

Table 1: Frequency of allocation types by treatment using alternative definition of allocation types. †: significant difference between treatment and baseline ($p < 0.05$) according to a regression where the dependent variable is the frequency of each allocation type and the independent variable is a treatment versus baseline dummy. We use random effects panel regressions clustering standard errors by session. An observation is a committee in a period.

	$\Pr[\text{Allocation}_{(t)} = \text{Allocation}_{(t-1)}]$		
Allocation Type$_{(t-1)}$	**Baseline**	**Private**	**Public**
DICTATORIAL	0.33 (3)	0.38† (21)	0.00† (1)
MAJORITARIAN	0.19 (108)	0.56† (250)	0.17 (12)
UNIVERSAL	0.83 (163)	0.79† (144)	0.94† (196)
OTHER	0.10 (21)	0.17 (12)	0.00 (1)
Observations	295	427	210

Table 2: Persistence of allocation by treatment and allocation type using alternative definition of allocation types. Number of observations for each allocation type and treatment in parentheses. †: significant difference between treatment and baseline ($p < 0.05$) according to a regression where the dependent variable is the probability an allocation persists and the independent variable is a treatment dummy. We use random effects panel regressions clustering standard errors by session. The results are unchanged if we use a Probit regression with standard errors clustered at the session level. An observation is a committees in a period.

	Dependent Variable: Coalition Duration			
Private Communication	1.56***	-0.77		
	(0.40)	(1.15)		
Public Communication			-0.43	2.51***
			(0.28)	(0.65)
Game Length	-0.03	0.46**	-0.03	0.75***
	(0.05)	(0.19)	(0.03)	(0.12)
Constant	1.48**	0.65	1.55***	-2.36**
	(0.62)	(1.98)	(0.38)	(1.02)
Treatments	Baseline & Private	Baseline & Private	Baseline & Public	Baseline & Public
Coalition Type	Majoritarian	Universal	Majoritarian	Universal
Observations	69	49	19	64
R^2	0.0728	0.2758	0.0675	0.5062

Table 3: OLS regressions using alternative definition of allocation types. Standard errors clustered by committees in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. An observation is a coalition that lasts for at least one period.

	Pr{Universal Allocation}			
Any Message	-1.00***	-0.79***	-0.59**	-0.75
	(0.21)	(0.27)	(0.25)	(0.54)
NP: Lobby for Oneself	-0.68	-1.29*	-1.29*	-1.03
	(0.45)	(0.71)	(0.70)	(1.10)
NP: Lobby for Fairness	0.35	1.23**	0.46	0.19
	(0.33)	(0.53)	(0.40)	(0.73)
NP: Form a Coalition	-0.50*	-0.52	-0.73**	-0.26
	(0.28)	(0.54)	(0.33)	(1.04)
NP: History	0.01	-0.96	0.14	-0.56
	(0.38)	(0.59)	(0.51)	(1.09)
NP: Suggest 20-20-20	0.75**	1.10*	0.72*	0.81
	(0.30)	(0.56)	(0.39)	(0.91)
NP: Suggest 30-30-0	-0.74*	-0.20	-0.85	-0.62
	(0.44)	(1.18)	(0.52)	(1.61)
P: Lobby for Oneself	0.64	1.05	0.28	-0.52
	(0.62)	(1.01)	(0.78)	(1.20)
P: Lobby for Fairness	0.23	0.44	0.26	-0.40
	(0.40)	(0.57)	(0.44)	(0.98)
P: Form a Coalition	-0.67**	-0.11	-0.56	-1.93
	(0.34)	(0.80)	(0.37)	(1.49)
P: History	0.01	-0.15	0.45	-1.28
	(0.56)	(0.84)	(0.65)	(1.24)
P: Suggest 20-20-20	1.75***	1.02	1.89***	2.40
	(0.39)	(0.89)	(0.45)	(2.98)
P: Suggest 30-30-0	-1.40***	-0.06	-1.12**	0.83
	(0.51)	(1.24)	(0.55)	(1.90)
Constant	0.35***	1.61***	-0.12	2.81***
	(0.13)	(0.20)	(0.16)	(0.40)
Treatment	Private	Public	Private	Public
Subjects	All	All	Experienced	Experienced
Observations	638	433	450	251
Pseudo R^2	0.0919	0.0785	0.0745	0.0110

Table 4: Penalized maximum likelihood regressions with alternative definition of allocation types. NP stands for messages sent by non-proposers; P stands for messages sent by proposers. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. An observations is a committee in a period. Observations do not include periods with Dictatorial allocations.

Appendix B: Weaker Definition of Durable Coalition

We define a *weak durable coalition* as a committee that channels resources to the same subset of members as in the previous period. To identify weak durable coalitions, Dictatorial allocations are classified as one of three types (those that give most of the resources, respectively, to member 1, 2, or 3), Majoritarian allocations are classified as one of three types (those where the resources are divided between members 1 and 2; members 1 and 3; and members 2 and 3), and Universal allocations are classified as a single type. A weak durable coalition then is a committee that continues from one period to the next with an allocation of the same type.

	Pr[Allocation Type$_{(t)}$ = Allocation Type$_{(t-1)}$]		
Allocation Type$_{(t-1)}$	**Baseline**	**Private**	**Public**
DICTATORIAL	0.33 (3)	0.57† (21)	-
MAJORITARIAN	0.22 (79)	0.71† (219)	0.22 (9)
UNIVERSAL	0.88 (213)	0.86 (187)	0.98† (201)
Observations	295	427	210

Table 5: Persistence of allocation by treatment and allocation type using weaker definition of persistence. Number of observations for each allocation type and treatment in parentheses. †: significant difference between treatment and baseline ($p < 0.05$) according to a regression where the dependent variable is the probability an allocation persists and the independent variable is a treatment dummy. We use random effects panel regressions clustering standard errors by session. The results are unchanged if we use a Probit regression with standard errors clustered at the session level. An observation is a committees in a period.

	Dependent Variable: Coalition Duration		
Private Communication	2.73***	-1.15	
	(0.45)	(1.00)	
Public Communication			2.10***
			(0.68)
Game Length	0.01	0.15	0.57***
	(0.07)	(0.11)	(0.15)
Constant	1.00	3.81***	-0.74
	(0.78)	(1.28)	(1.20)
Treatments	Base & Private	Base & Private	Base & Public
Coalition Type	Majoritarian	Universal	Universal
Observations	57	69	75
R^2	0.1951	0.0589	0.3055

Table 6: OLS regressions using weaker definition of coalition. Standard errors clustered by committees in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. An observation is a coalition that lasts for at least one period.

Appendix C: Irrelevance of Initial Status Quo

Dependent Variable: Allocation to Member i			
Allocation to i in Current SQ (Endogenous)	-0.08	0.51**	-0.05
	(0.23)	(0.20)	(0.09)
Allocation to i in Initial SQ (Exogenous)	-0.14	-0.11	0.01
	(0.13)	(0.09)	(0.02)
Constant	24.05***	11.24**	21.00***
	(3.56)	(4.82)	(1.96)
Observations	99	135	126
Period	2	2	2
Treatment	Baseline	Private	Public
Pseudo R-Squared	0.006	0.025	0.002

Table 7: Tobit regressions. Standard errors clustered by committees in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. One observation is a committee. When using the whole sample, the coefficients of Allocation to i in Current SQ in the last two columns are positive and significant at the 1% confidence level.

Appendix D: List of Keywords for Semantic Domains

A message belongs to a class if it contains the following words or expressions:

1. Lobby for Oneself: 'help me', 'help a friend out', 'give(s) me', 'gimme', 'leave me', 'X would be enough for my vote', 'X is enough for my vote', 'I'll vote for with X', 'as long as I get X', 'can I have more', 'let me earn', 'move me up', 'I really need', 'I need', 'I (would) want', 'bump me up', 'I'd be happy if you', accept.

2. Lobby for Fairness: equal, equally, equality, equitably, equitable, egalitarian, fair, fairly, fairer, fairness, unfair, greedy, greed, justice, 'feel bad', 'felt bad', 'feel kinda bad', 'felt a little bad', 'give him', 'leave him', selfish, even, evenly, evens, balance, balances, balancing, unbalanced, generous, parity, 'let him have', 'for everyone', socialism, distribute, redistribution, distribution, 'move him up'

3. Form a Coalition: alliance, allied, ally, allying, trust, (un)trustworthy, team(s), teamwork, teammate, loyal, loyalty, together, deal(s), 'give you', 'gives you', 'giving you', 'help(ing) you', 'each other', unite, promise, commit, collude, colluding, stick(ing), cooperating, cooperation, reciprocate, 'I will/'ll do the same', 'I do the same', 'can I count on your vote?', 'support my proposal', 'bump you up', 'between us', pact, 'both of us', collaborate.

4. History: threat, betrayal, betray, betrayed, betraying, deviate(s), deviation(s), defect(s), defector, revenge, retaliation, retaliate, cheated, cheater, cooperated, punishment, punishing, punished, penalize, lie(s), lied, gave (excluded 'if I/you/he gave'), accepted, 'helped you', promised, 'stuck to the alliance', 'stuck with the status quo', cooperated, voted, proposed, supported, trusted.

Appendix E: Instructions (Private Communication)

This is an experiment in committee decision making. The instructions are simple, and if you follow them carefully and make good decisions, you can earn a considerable amount of money which will be paid to you in cash at the end of the experiment. The currency in this experiment is called tokens. The total amount of tokens you earn in the experiment will be converted into US dollars using the rate of 20 Tokens = $1. In addition, you will get a $5 participation fee.

This experiment consists of 4 Matches. In every Match you will each be randomly and anonymously matched with two other participants in the room to form committees of three. Each member of the committee will be assigned a committee member number (from 1 to 3). Your committee as well as your committee member number will remain the same within a Match but will change between Matches. Each Match consists of a number of Rounds.

The number of Rounds in a Match is not fixed. Instead, it depends on chance. After each Round in a Match, there is an 80% chance that another Round will take place. In other words, after each Round there is an 80% chance that the Match continues, and a 20% chance that the Match ends.

After each round, there is an 80% probability that the match will continue for at least another round. Specifically, after each round, whether the match continues for another round will be determined by a random number between 1 and 100 generated by the computer. If the number is lower than or equal to 80 the match will continue for at least another round, otherwise it will end. For example, if you are in round 2, the probability that there will be a third round is 80% and if you are in round 9, the probability that there will be a tenth round is also 80%. That is, at any point in a match, the probability that the match will continue is 80%. However, you will play every match in blocks of 4 rounds. At the end of each block you will learn if the match ended in the previous block of 4 rounds or not. If it has not, you will play another block of 4 rounds. If the match has ended in this block, you will see in which round it had actually ended.

In each Round, your committee has 60 tokens to allocate among the three members. At the beginning of the first Round of a Match, the computer randomly selects an initial allocation and displays it on your computer as what we call the Status Quo. One of the members of your committee then is selected at random by the computer to be the Proposer for this Round. The Proposer makes a Proposal for an alternative allocation he would like the committee to choose. This proposal can be any three numbers (including 0s) that add to exactly 60. Once the Proposer in a Round has submitted his Proposal, all members of his committee will vote for the Status Quo or the Proposal. If the Proposal receives a

simple majority of votes (that is, two or more members in your committee vote in favor of the Proposal), then the Proposal passes and each of you in the committee will receive the number of tokens indicated in the Proposal. If the Proposal is rejected instead, each of you receives the number of tokens given in the Status Quo.

Each round, the match continues for another round with probability 80%. When you move to another round of the same match, your committee's allocation decision in the previous Round becomes the Status Quo in the new Round. Therefore, if the original Status Quo received a majority of the votes in the previous round, it continues as the Status Quo in this new round. But if the Proposal in the previous round received a majority of the votes, it becomes the Status Quo in this new round. The proposal and voting process then follows the same rules as before. A committee member will be selected at random to submit an allocation proposal and a vote is taken between the Status Quo and the Proposal.

Once a match ends, a new Match will begin in which you will be randomly assigned to a new committee. If your committee finishes early, you may have to wait for other committees to finish. Remember that in each Match you are randomly matched into committees and committee member numbers are randomly assigned. Thus, your committee member number is likely to vary from Match to Match, while it remains the same within a Match from Round to Round. Once four matches have been completed, the experiment is over. Your total earnings for the experiment are the sum of your earnings over all rounds before each match ends. You will NOT receive any payoff from rounds you've played within a block after the match had ended.

Now please, have a look at the screen in front of the room.

[SHOW SLIDE 1]

This is the first screen you will see in each round of a match if you are not the proposer for this round. You have been assigned by the computer to a committee of 3 members, and assigned a committee member number 1, 2, or 3. This committee number stays the same for all rounds of this match, but will change with each match. The initial Status Quo, which was determined randomly by the computer, is displayed in blue. Information specific to you is highlighted in red. One of the committee members (1, 2, or 3) has been randomly selected to be the Proposer for this round in your committee.

In each Round, before the Proposer submits his proposal, members of your committee will have the opportunity to communicate with each other using the chat box. The communication is structured as follows. On the left of the screen, you will see a box that displays all messages sent to you. You will not see whether the other members have communicated among themselves. In the box below that one, you can type your own message and send it to

a particular member of the committee. To select the member to receive your message, simply click on the button that corresponds to the member to whom you want to send the message. The chat box will be available until the Proposer submits his proposal or 120 seconds have passed, whatever comes first. At that moment the chat box will be disabled.

[SHOW SLIDE 2]

This is the first screen you will see in each round of a match if you are the proposer for this round. A proposal consists of three numbers, A1, A2, and A3, where A1 is the allocation to committee member 1, A2 is the allocation to committee member 2, and A3 is the allocation to committee member 3. The three allocations must add to exactly 60. To make a proposal, enter the 3 numbers using your keyboard and then click on the confirm button. If you enter three numbers that do not add to 60 or if you enter a negative allocation, the computer will ask you to try again. As everyone else, you have the opportunity to communicate with any other committee member before you submit your proposal, using the same chat interface we described before.

[SHOW SLIDE 3]

Once the Proposer has submitted his allocation proposal, you will see a similar screen where a vote is taken between this Proposal and the Status Quo. Your payoffs for the Status Quo and the Proposal are displayed in red in the table on your screen. You will now have an opportunity to vote for the Status Quo or the Proposal by clicking on the corresponding button.

[SHOW SLIDE 4]

Finally, a screen similar to this will summarize the voting results. Each committee member's vote is displayed in the table along with the outcome and your payoff. This marks the end of the round.

[SHOW SLIDE 5]

You will automatically continue on to the next round if you're within a block of 4 rounds. If you're at the end of a block, you will see a screen similar to this one. The computer generated random numbers for all rounds. If all the random numbers are less than 80, this means that the match continues, and you will start another block of 4 rounds. Otherwise, the match will be considered to have ended in the first round where the random number

was greater than 80. You will only receive payoffs for rounds before the match ended. Once you're informed that a match had ended, you will be randomly assigned to a new committee.

In the second round of a match, you will see a screen similar to this: you have the same committee member number as in the first round, and the members of your committee all stay the same. The round 2 Status Quo is whatever alternative received a majority of the votes in the first round. The proposal and voting process then follows the same rules as before. A committee member will be selected at random to submit an allocation proposal and a vote is taken between the Status Quo and the Proposal.