

# Online Appendix

## [Not Intended For Publication]

**Definition** (Match-level cycle). Let  $S = (f_t, c_t)_{t=1}^T$  denote the ordered sequence of all matches formed (offers accepted) in a market, experimental or simulated. That is, the  $t$ -th pair formed in the market is between food  $f_t \in F$  and color  $c_t \in C$ , and  $T$  is the total number of matches formed. Two pairs,  $(f, c)$  and  $(f', c')$ , are connected if  $f = f'$ , or  $c = c'$ , and not both. A match-level cycle is a subsequence of  $S$ ,  $(f_{t_k}, c_{t_k})_{k=1}^K$ , such that (i) the initial and final pairs coincide, i.e.,  $(f_{t_1}, c_{t_1}) = (f_{t_K}, c_{t_K})$ ; (ii) the initial pair is not reached in the interim, i.e.,  $(f_{t_k}, c_{t_k}) \neq (f_{t_1}, c_{t_1})$  for every  $k = 2, 3, \dots, K - 1$ ; (iii) contiguous pairs along the subsequence are connected, i.e.,  $(f_{t_k}, c_{t_k})$  and  $(f_{t_{k+1}}, c_{t_{k+1}})$  are connected for every  $k = 1, 2, \dots, K - 1$ ; and (iv) it is of maximal length, i.e., there does not exist a longer subsequence of  $S$ ,  $(f_{t'_k}, c_{t'_k})_{k=1}^{K'}$  with  $K' > K$ , that satisfies (i)–(iii), and starts at the same point in  $S$ , i.e., with  $t'_1 = t_1$ . The length of a match-level cycle  $(f_{t_k}, c_{t_k})_{k=1}^K$  is  $K$ .

**Discussion and examples of match-level cycles.** Under our definition, more than one match-level cycle can stem from the same pair. Moreover, match-level cycles can overlap or be contained in each other. Below we include three examples to illustrate these features of match-level cycles and discuss the motivation underlying the definition.

1. **Example of two match-level cycles linking the same repeated pair.** This example is the same one given in the main text (see footnote 35). Suppose we observe the following sequence of matches in  $S$ :  $(f, c)$ ,  $(f, c')$ ,  $(f', c)$ , and  $(f, c)$ . This means we observe that  $f$  and  $c$  break their tentative pairing to match with  $c'$  and  $f'$ , respectively, and then break these two matches to pair with one another again. There are two match-level cycles of length 3 in this sequence, given by:  $(f, c) \rightarrow (f, c') \rightarrow (f, c)$ , and  $(f, c) \rightarrow (f', c) \rightarrow (f, c)$ . Our definition captures the plausible perceptions of agents on ensuing paths that revert back to the starting point. Indeed, with the observed sequence, there are two possible paths doing so.

2. **Example of two overlapping match-level cycles.** Suppose we observe the following sequence of matches in  $S$ :  $(f, c)$ ,  $(f, c')$ ,  $(f, c)$ , and  $(f, c')$ . That is,  $f$  matches with  $c$ , then this match breaks, and  $f$  matches with  $c'$ , after which  $f$  matches again with  $c$ , followed by  $f$  matching with  $c'$  yet again. In this sequence, there are two match-level cycles of length 3: one is  $(f, c) \rightarrow (f, c') \rightarrow (f, c)$ , the other is  $(f, c') \rightarrow (f, c) \rightarrow (f, c')$ . This captures the fact that agent  $f$  switches back to her original partner from two separate starting points.

3. **Example of a match-level cycle contained in another match-level cycle.** Suppose we observe the following sequence of matches in  $S$ :  $(f, c)$ ,  $(f, c')$ ,  $(f', c)$ ,  $(f', c')$ ,  $(f', c)$ , and  $(f, c)$ . In this sequence, there are three match-level cycles, two of length 5, and one of length 3. The two match-level cycles of length 5 link  $(f, c)$  back to itself, and are:  $(f, c) \rightarrow (f, c') \rightarrow (f', c') \rightarrow (f', c) \rightarrow (f, c)$ , and  $(f, c) \rightarrow (f', c) \rightarrow (f', c') \rightarrow (f', c) \rightarrow (f, c)$ . The match-level cycle of length 3 is contained in the second of these two cycles:  $(f', c) \rightarrow (f', c') \rightarrow (f', c)$ . The first two match-level cycles of length 5 are indeed of maximal length since the subsequences  $(f, c) \rightarrow (f, c') \rightarrow (f, c)$ , and  $(f, c) \rightarrow (f', c) \rightarrow (f, c)$ , also link  $(f, c)$  to itself but do not satisfy the maximality restriction. Our definition captures the idea that agents involved in the pair  $(f, c)$  and those involved in the pair  $(f', c)$  perceive cyclical behavior as plausible, and do so via different, albeit overlapping, paths.

**Deferred Acceptance with Two-Sided Random Proposers (2RDA).** In the 2RDA, an agent proposes to an agent in each round. If the offer is accepted, both agents are matched tentatively. As in the standard DA, agents go down their rank-ordered lists as they propose to other agents. However, at every round, the proposer may be chosen from either side of the market, and only agents who are not matched to their most preferred agent among the ones they have not proposed to (i.e., agents who are “active”) may be chosen as proposers. In contrast to standard DA, this algorithm may result in unstable matchings. Nonetheless, by construction, all offers are “Gale-Shapley,” “downward,” and do not “skip someone” (as defined in the main text). As our implementation of this procedure is not standard, we now provide our algorithm’s details. To write

down the algorithm, it is convenient to keep track of two ranks for every agent, one for their next offer (if chosen as proposers), and one for their current match (if any).

**Algorithm (2RDA).** *Set the match-rank of every agent at  $\infty$ , and their offer-rank at 1. An agent is active if their match-rank is strictly greater than their offer-rank. If there are no active agents, stop; else, proceed in steps:*

- *Choose an active agent at random. Say, food  $f$  is chosen (analogously if a color is chosen).*
- *Food  $f$  proposes to the color  $c$  that they rank at their current offer-rank (if  $f$ 's offer-rank equals 1, they propose to their top-choice, if it's 2, to their second choice, and so on).*
- *Color  $c$  accepts the offer if they find fruit  $f$  acceptable and rank them above their match-rank (i.e., the rank of food  $f$  in the list of color  $c$  is strictly less than their match-rank).*
- *If the offer is accepted, match  $f$  and  $c$ , and*
  - *set  $f$ 's match-rank to their current offer-rank ( $c$ 's rank in their rank-ordered list).*
  - *set  $c$ 's match-rank to the rank corresponding to  $f$  in their rank-ordered list.*
  - *set the match-rank of their previous partners (if any) to  $\infty$ .*
- *Increase food  $f$ 's offer-rank by one.*

**Table A1** reports simulation results from a variation of 2RDA that captures agents' cardinal incentives to make offers. Specifically, we run simulations in which an active agent  $a$  is chosen to be a proposer with probability proportional to  $g_a$  or  $\exp(\lambda g_a)$ , where  $g_a$  is the gain  $a$  would obtain if their next offer were accepted, and  $\lambda > 0$  is a fixed parameter. The resulting simulations generate a higher frequency of stable matchings, but they fail to replicate other aspects of the data, in particular the volume of offers.

**Deferred Acceptance with Compensation Chains (DACC).** This algorithm, inspired by Dworzak (2021), is similar to 2RDA with one critical adjustment. At every round, a proposer is chosen uniformly at random from either side of the market. Say agent  $i$  is chosen as proposer. Agent  $i$  then makes a proposal to agent  $j$ , where  $j$  is  $i$ 's most preferred agent among those that  $i$  has not proposed to or who have not been matched to  $i$  and broken the match. Agent  $j$  accepts the proposal if they prefer agent  $i$  to their current match. If agent  $j$  accepts the proposal,  $i$  and  $j$  are tentatively matched and any existing match they are involved in is severed. An agent is *deceived* if their current

match, who originally proposed to them, breaks the match to match with another agent (e.g., if  $j$  accepts  $i$ 's proposal while being matched to  $i'$ , whom  $j$  proposed to previously, then  $i'$  is deceived). Whenever an agent is deceived, they are “compensated” and are chosen as proposers in the next round. Compensating an agent can cause further agents to be deceived, triggering a “compensation chain.” Dworzak (2021) proved that, unlike 2RDA, this algorithm converges with probability one to a stable matching, and that every stable matching can be reached by a sequence of proposers.

Table A2 reports simulation results from a variation of DACC that captures agents’ cardinal incentives to make offers. Specifically, we run simulations in which an agent  $a$  is chosen to be a proposer with probability proportional to  $g_a$  or  $\exp(\lambda g_a)$ , where  $g_a$  is the gain  $a$  would obtain if their next offer were accepted, and  $\lambda > 0$  is a fixed parameter. The resulting simulations tend to increase the speed of convergence to stability of the algorithm, which is already faster than our experimental markets in the benchmark version of DACC. Furthermore, simulation results are further away from median stable outcomes.

**Random Paths to Stability (RPS).** This model assumes that blocking pairs are formed at random. Starting from some matching at time  $t$ , say  $\mu_t$ , the set of all blocking pairs is tabulated, and one is formed uniformly at random. That is, the corresponding color and food in that blocking pair get matched and their partners in  $\mu_t$  (if they exist) are unmatched. The resulting matching is  $\mu_{t+1}$ , and the process continues iteratively. Roth and Vate (1990) proved that these dynamics converge to a stable matching with probability one.<sup>40</sup>

As discussed in the main text (see Table 7), in markets with five stable matchings, RPS does a poor job at predicting the offer volume and the distribution of ultimate stable matchings that we see in our experimental data. In order to give naïve dynamics such as RPS a chance at explaining our data, we consider versions of RPS in which the probability that a blocking pair forms depends on the welfare gain for the agents participating. In particular, we consider a version in which the probability that a blocking pair forms is proportional to the sum of payoff gains of the blocking

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<sup>40</sup>Rudov (2022) shows that, in fact, this prediction cannot be refined further: under mild conditions, any unstable matching can reach any stable matching through these dynamics.

partners. We also consider a version in which that probability is logistic. Namely, the probability that any blocking pair  $(f, c)$  forms is proportional to  $\exp(\lambda g_{f,c})$ , where  $g_{f,c}$  is the sum of  $f$  and  $c$ 's payoffs from matching and  $\lambda$  is a sensitivity parameter.

**Table A3** reports results from simulations of the original uniform RPS, as well as its two variants, including alternative values of the sensitivity parameter  $\lambda$  of the logistic variant. The logistic model seems to fit the data of markets with multiple stable matchings best, perhaps due to the additional degree of freedom its sensitivity parameter affords.

**Random Best Response (RBR).** This dynamic model, due to [Ackermann et al. \(2011\)](#), is an alternative to RPS in which, instead of randomly choosing blocking pairs, a random agent is selected at each stage. That agent's most preferred blocking pair is then formed, if one exists. Specifically, given a matching  $\mu_t$ , we tabulate the set of agents that have at least one blocking partner, and choose one uniformly at random. The next matching,  $\mu_{t+1}$ , is obtained by matching the chosen agent with their most preferred blocking partner. RBR converges with probability one to a stable matching, just as RPS.

We also consider versions of RBR in which cardinal payoff information is allowed to determine the probability with which a blocking pair is chosen. Similar to RPS, albeit to a lesser degree, the standard uniform version of RBR generates a higher offer volume observed in our data for markets with five stable matchings. We consider two variants analogous to those we consider for RPS. Let  $g_a$  denote the net gain agent  $a$  would obtain if matched to their most preferred blocking partner. In the two variants of RBR, we choose each agent  $a$  who is part of a blocking pair with probability proportional to  $g_a$ , or  $\exp(\lambda g_a)$ , where  $\lambda$  is a sensitivity parameter. **Table A4** reports simulation results for these different variants of RBR, allowing for an array of  $\lambda$  values.

Table A1: Simulations—Two-Sided Random Deferred Acceptance (2RDA)

	<i>Experiment</i>	<i>Uniform</i>	<i>Proportional</i>	0.005	0.0075	<i>Exponential</i> ( $\lambda$ )			
						0.01	0.05	0.1	0.5
<i>Unique stable matching</i>									
# offers	44.8	36.2	36.3	36.2	36.4	36.4	36.5	36.5	36.5
# matches	15.9	17.2	16.5	16.4	16.1	15.9	15.0	14.8	14.7
% accepted offers	41.3	51.6	48.8	48.6	47.5	46.8	44.3	43.6	43.4
# accepted   to BP	15.2	17.2	16.5	16.4	16.1	15.9	15.0	14.8	14.7
% repeated matches	14.0	4.7	1.7	1.5	0.9	0.6	0.1	0.0	0.0
% repeated matchings	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
# match-level cycles	2.5	1.4	0.5	0.4	0.3	0.2	0.0	0.0	0.0
avg. match-level cycle length	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.1	3.0
% final matching is stable	90.0	89.0	91.8	93.2	94.3	95.1	98.6	99.6	100.0
% final pairs are stable	94.7	98.4	98.7	98.9	99.0	99.0	99.6	99.9	100.0
<i>Two embedded 4-by-4 markets</i>									
# offers	39.7	25.4	23.4	23.6	23.1	22.8	21.8	21.7	21.7
# matches	15.9	15.9	13.1	13.3	12.6	12.3	11.6	11.6	11.6
% accepted offers	46.5	62.3	55.7	56.1	54.6	53.8	53.0	53.3	53.3
# accepted   to BP	15.1	15.9	13.1	13.3	12.6	12.3	11.6	11.6	11.6
% repeated matches	19.3	9.3	3.1	3.5	2.2	1.5	0.3	0.2	0.2
% repeated matchings	8.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
# match-level cycles	4.2	2.6	0.8	0.9	0.6	0.4	0.1	0.1	0.1
avg. match-level cycle length	3.2	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1
% final matching is stable	94.3	83.3	93.6	92.9	95.3	96.6	99.3	99.6	99.7
% final pairs are stable	99.6	96.5	98.7	98.5	99.0	99.3	99.9	99.9	99.9
<i>5 stable matchings &amp; 3 stable partners</i>									
# offers	59.2	54.2	51.7	51.7	50.0	48.7	43.3	42.2	42.1
# matches	24.6	30.7	25.5	25.3	23.3	21.9	15.4	13.8	13.1
% accepted offers	40.4	56.3	48.7	48.2	45.7	43.9	34.6	31.9	30.5
# accepted   to BP	22.6	30.7	25.5	25.3	23.3	21.9	15.4	13.8	13.1
% repeated matches	27.2	12.9	8.1	8.2	6.5	5.2	1.5	1.0	0.9
% repeated matchings	6.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
# match-level cycles	10.4	6.9	3.9	4.0	3.0	2.4	0.7	0.4	0.4
avg. match-level cycle length	3.5	3.9	3.7	3.7	3.6	3.6	3.7	3.6	3.6
% final matching is stable	75.0	46.9	55.1	56.6	63.1	68.5	88.4	91.6	90.5
% final pairs are stable	96.9	93.8	95.2	95.3	96.1	96.7	98.9	99.1	98.7
<i>Market-level outcomes (matchings)</i>									
% median   stable	80.0	64.1	43.2	42.7	36.7	33.5	13.9	7.2	4.4
% non-extremal   stable	100.0	89.1	77.2	75.5	69.9	65.7	29.9	17.5	11.9
% food-optimal   stable	0.0	5.5	7.3	7.3	8.5	9.4	23.6	25.3	25.0
% color-optimal   stable	0.0	5.3	15.5	17.2	21.6	24.9	46.5	57.1	63.1
<i>Individual-level outcomes (matches)</i>									
% median   stable	76.8	52.9	48.0	47.7	45.3	43.3	21.0	12.7	9.7
% fruit-optimal   stable	2.9	22.0	19.8	19.2	17.9	17.1	27.8	28.3	27.6
% color-optimal   stable	20.4	24.7	32.0	32.8	36.6	39.5	51.2	59.0	62.6

*Notes.* The table reports averages across 10,000 simulations of every market in our main treatments using the Two-Sided Random Deferred Acceptance (2RDA) algorithm. The first column reports the experimental averages for reference. Each column from the second reports the results using a distinct distribution to choose the proposer on each round. *Uniform* corresponds to uniformly at random; *Proportional* to probability proportional to  $g_a$ , and *Exponential* to probability proportional to  $\exp(\lambda g_a)$ , where  $g_a$  denotes the net gain of active agent  $a$  if their next proposal were accepted.

Table A2: Simulations—Deferred Acceptance with Compensation Chains (DACC)

	<i>Experiment</i>	<i>Uniform</i>	<i>Proportional</i>	<i>Exponential</i> ( $\lambda$ )				
				0.005	0.0075	0.01	0.05	0.075
<i>Unique stable matching</i>								
<i># offers</i>	44.8	35.3	35.5	35.6	35.9	36.1	36.9	37.2
<i># matches</i>	15.9	17.3	16.6	16.5	16.2	15.9	15.0	14.9
<i>% accepted offers</i>	41.3	53.5	50.2	49.7	48.3	47.4	43.8	43.0
<i># accepted   to BP</i>	15.2	17.3	16.6	16.5	16.2	15.9	15.0	14.9
<i>% repeated matches</i>	14.0	5.1	2.0	1.8	1.2	0.8	0.1	0.1
<i>% repeated matchings</i>	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i># match-level cycles</i>	2.5	1.6	0.7	0.6	0.4	0.3	0.0	0.0
<i>avg. match-level cycle length</i>	3.3	3.3	3.2	3.2	3.2	3.2	3.0	3.0
<i>% final matching is stable</i>	90.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>% final pairs are stable</i>	94.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Two embedded 4-by-4 markets</i>								
<i># offers</i>	39.7	23.8	22.7	22.8	22.6	22.4	21.7	21.7
<i># matches</i>	15.9	15.1	12.8	12.9	12.4	12.1	11.5	11.5
<i>% accepted offers</i>	46.5	63.3	56.1	56.6	55.0	54.1	53.2	53.3
<i># accepted   to BP</i>	15.1	15.1	12.8	12.9	12.4	12.1	11.5	11.5
<i>% repeated matches</i>	19.3	7.9	2.5	2.8	1.7	1.2	0.3	0.2
<i>% repeated matchings</i>	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i># match-level cycles</i>	4.2	1.9	0.5	0.6	0.4	0.2	0.1	0.0
<i>avg. match-level cycle length</i>	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0
<i>% final matching is stable</i>	94.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>% final pairs are stable</i>	99.6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>5 stable matchings &amp; 3 stable partners</i>								
<i># offers</i>	59.2	48.4	46.9	47.0	46.3	45.6	42.5	41.9
<i># matches</i>	24.6	27.9	23.3	23.2	21.6	20.5	15.3	14.2
<i>% accepted offers</i>	40.4	57.3	49.0	48.7	45.9	44.1	35.1	33.2
<i># accepted   to BP</i>	22.6	27.9	23.3	23.2	21.6	20.5	15.3	14.2
<i>% repeated matches</i>	27.2	12.1	8.5	8.7	7.4	6.3	2.3	1.8
<i>% repeated matchings</i>	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i># match-level cycles</i>	10.4	5.7	3.7	3.9	3.2	2.7	1.0	0.8
<i>avg. match-level cycle length</i>	3.5	3.5	3.3	3.3	3.2	3.2	3.2	3.2
<i>% final matching is stable</i>	75.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>% final pairs are stable</i>	96.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Market-level outcomes (matchings)</i>								
<i>% median   stable</i>	80.0	50.4	38.5	39.0	36.1	34.3	17.3	11.6
<i>% non-extremal   stable</i>	100.0	75.1	68.3	68.1	64.8	61.6	32.2	24.1
<i>% food-optimal   stable</i>	0.0	19.4	17.9	17.1	16.3	16.2	26.2	27.2
<i>% color-optimal   stable</i>	0.0	5.4	13.8	14.8	19.0	22.2	41.6	48.6
<i>Individual-level outcomes (matches)</i>								
<i>% median   stable</i>	76.8	62.8	53.4	53.5	50.5	48.0	24.7	17.8
<i>% fruit-optimal   stable</i>	2.9	19.4	17.9	17.1	16.3	16.2	26.2	27.2
<i>% color-optimal   stable</i>	20.4	17.8	28.7	29.4	33.3	35.9	49.1	54.9

*Notes.* The table reports averages across 10,000 simulations of every market in our main treatments using the Deferred Acceptance with Compensation Chains (DACC) algorithm of Dworczak (2021). The first column reports the experimental averages for reference. Each column from the second reports the results using a distinct distribution to choose the proposer on each round. *Uniform* corresponds to uniformly at random; *Proportional* to probability proportional to  $g_a$ , and *Exponential* to probability proportional to  $\exp(\lambda g_a)$ , where  $g_a$  denotes the net gain of active agent  $a$  if their next proposal were accepted.

Table A3: Simulations—Random Paths to Stability (RPS)

	<i>Experiment</i>	<i>Uniform</i>	<i>Proportional</i>	0.005	0.01	<i>Exponential</i> ( $\lambda$ )			
						0.0175	0.02	0.03	0.05
<i>Unique stable matching</i>									
# offers	44.8	36.4	27.0	20.2	15.7	13.1	12.6	11.5	10.8
# matches	15.9	36.4	27.0	20.2	15.7	13.1	12.6	11.5	10.8
% accepted offers	41.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
# accepted   to BP	15.2	36.4	27.0	20.2	15.7	13.1	12.6	11.5	10.8
% repeated matches	14.0	20.2	12.4	6.9	3.0	1.4	1.2	0.8	0.4
% repeated matchings	6.0	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0
# match-level cycles	2.5	13.5	6.0	2.5	0.9	0.3	0.3	0.2	0.1
avg. match-level cycle length	3.3	4.4	3.9	3.6	3.6	3.7	3.7	3.7	4.0
% final matching is stable	90.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% final pairs are stable	94.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Two embedded 4-by-4 markets</i>									
# offers	39.7	28.1	19.8	15.6	12.9	11.4	11.1	10.1	8.9
# matches	15.9	28.1	19.8	15.6	12.9	11.4	11.1	10.1	8.9
% accepted offers	46.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
# accepted   to BP	15.1	28.1	19.8	15.6	12.9	11.4	11.1	10.1	8.9
% repeated matches	19.3	17.1	9.6	5.1	2.0	1.0	0.8	0.4	0.1
% repeated matchings	8.0	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0
# match-level cycles	4.2	8.3	3.3	1.5	0.5	0.2	0.2	0.1	0.0
avg. match-level cycle length	3.2	3.9	3.5	3.4	3.5	3.7	3.7	3.8	3.8
% final matching is stable	94.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% final pairs are stable	99.6	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>5 stable matchings &amp; 3 stable partners</i>									
# offers	59.2	682.0	162.5	69.5	45.8	37.7	35.9	30.7	25.1
# matches	24.6	682.0	162.5	69.5	45.8	37.7	35.9	30.7	25.1
% accepted offers	40.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
# accepted   to BP	22.6	682.0	162.5	69.5	45.8	37.7	35.9	30.7	25.1
% repeated matches	27.2	79.6	55.3	34.7	23.0	17.6	16.5	13.2	9.7
% repeated matchings	6.2	1.3	1.6	1.1	0.9	0.8	0.8	0.6	0.3
# match-level cycles	10.4	8.23e21	1.10e14	4714.4	33.4	19.3	17.2	11.5	6.1
avg. match-level cycle length	3.5	96.3	19.9	7.4	6.1	6.0	6.0	5.8	5.5
% final matching is stable	75.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% final pairs are stable	96.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Market-level outcomes (matchings)</i>									
% median   stable	80.0	39.4	40.7	48.4	56.2	59.3	59.5	59.1	58.6
% non-extremal   stable	100.0	77.5	80.6	82.5	84.2	84.0	83.4	81.7	78.8
% food-optimal   stable	0.0	10.8	5.0	2.7	1.1	0.6	0.5	0.5	0.4
% color-optimal   stable	0.0	11.6	14.4	14.8	14.8	15.4	16.1	17.8	20.8
<i>Individual-level outcomes (matches)</i>									
% median   stable	76.8	58.5	60.6	65.4	70.2	71.6	71.5	70.4	68.7
% fruit-optimal   stable	2.9	10.8	5.0	2.7	1.1	0.6	0.5	0.5	0.4
% color-optimal   stable	20.4	30.7	34.3	31.9	28.8	27.8	28.0	29.1	30.9

*Notes.* The table reports averages across 10,000 simulations of every market in our main treatments using the Random Paths to Stability (RPS) algorithm of Roth and Vate (1990). The first column reports the experimental average for reference. Each column from the second reports the results using a distinct distribution to choose a blocking pair on each round. *Uniform* corresponds to uniformly at random; *Proportional* to probability proportional to  $g_{f,c}$ , and *Exponential* to probability proportional to  $\exp(\lambda g_{f,c})$ , where  $g_{f,c}$  refers to the total net gain of blocking pair  $(f, c)$ .

Table A4: Simulations—Random Best Response (RBR)

	<i>Experiment</i>	<i>Uniform</i>	<i>Proportional</i>	0.001	0.0025	<i>Exponential</i> ( $\lambda$ )			
						0.0035	0.00425	0.005	0.0075
<i>Unique stable matching</i>									
<i># offers</i>	44.8	19.8	17.5	19.1	18.4	18.0	17.8	17.5	16.9
<i># matches</i>	15.9	19.8	17.5	19.1	18.4	18.0	17.8	17.5	16.9
<i>% accepted offers</i>	41.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i># accepted   to BP</i>	15.2	19.8	17.5	19.1	18.4	18.0	17.8	17.5	16.9
<i>% repeated matches</i>	14.0	10.9	4.0	8.9	6.6	5.4	4.7	4.0	2.6
<i>% repeated matchings</i>	6.0	0.3	0.0	0.2	0.1	0.0	0.0	0.0	0.0
<i># match-level cycles</i>	2.5	3.8	1.3	3.0	2.1	1.7	1.5	1.3	0.8
<i>avg. match-level cycle length</i>	3.3	3.4	3.3	3.4	3.3	3.3	3.3	3.3	3.3
<i>% final matching is stable</i>	90.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>% final pairs are stable</i>	94.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Two embedded 4-by-4 markets</i>									
<i># offers</i>	39.7	15.3	12.4	14.5	13.5	13.1	12.8	12.6	12.2
<i># matches</i>	15.9	15.3	12.4	14.5	13.5	13.1	12.8	12.6	12.2
<i>% accepted offers</i>	46.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i># accepted   to BP</i>	15.1	15.3	12.4	14.5	13.5	13.1	12.8	12.6	12.2
<i>% repeated matches</i>	19.3	9.6	2.0	7.4	5.0	3.8	3.1	2.5	1.3
<i>% repeated matchings</i>	8.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0
<i># match-level cycles</i>	4.2	2.6	0.4	1.9	1.2	0.9	0.7	0.6	0.3
<i>avg. match-level cycle length</i>	3.2	3.2	3.1	3.2	3.2	3.1	3.1	3.1	3.1
<i>% final matching is stable</i>	94.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>% final pairs are stable</i>	99.6	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>5 stable matchings &amp; 3 stable partners</i>									
<i># offers</i>	59.2	145.0	32.9	89.7	54.2	43.3	38.0	34.3	27.6
<i># matches</i>	24.6	145.0	32.9	89.7	54.2	43.3	38.0	34.3	27.6
<i>% accepted offers</i>	40.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i># accepted   to BP</i>	22.6	145.0	32.9	89.7	54.2	43.3	38.0	34.3	27.6
<i>% repeated matches</i>	27.2	58.7	19.3	47.6	34.1	27.7	24.0	20.9	14.5
<i>% repeated matchings</i>	6.2	1.0	0.5	0.8	0.7	0.6	0.5	0.5	0.4
<i># match-level cycles</i>	10.4	2.61e07	14.9	695.3	52.9	29.5	21.0	16.3	8.9
<i>avg. match-level cycle length</i>	3.5	12.2	4.0	7.6	5.1	4.5	4.2	4.1	3.8
<i>% final matching is stable</i>	75.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>% final pairs are stable</i>	96.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Market-level outcomes (matchings)</i>									
<i>% median   stable</i>	80.0	46.2	56.1	50.7	54.2	55.0	55.2	55.0	54.0
<i>% non-extremal   stable</i>	100.0	79.1	83.5	82.3	84.1	84.0	83.6	82.9	80.1
<i>% food-optimal   stable</i>	0.0	8.1	3.3	5.8	4.2	3.9	3.7	3.8	4.2
<i>% color-optimal   stable</i>	0.0	12.9	13.2	11.9	11.6	12.1	12.7	13.4	15.7
<i>Individual-level outcomes (matches)</i>									
<i>% median   stable</i>	76.8	62.6	69.8	66.5	69.2	69.5	69.4	68.9	67.1
<i>% fruit-optimal   stable</i>	2.9	8.1	3.3	5.8	4.2	3.9	3.7	3.8	4.2
<i>% color-optimal   stable</i>	20.4	29.3	26.9	27.7	26.6	26.6	26.9	27.3	28.8

*Notes.* The table reports averages across 10,000 simulations of every market in our main treatments using the the Random Best Response (RBR) algorithm of [Ackermann et al. \(2011\)](#). The first column reports the experimental averages for reference. Each column from the second reports the results using a distinct distribution to choose an agent among the ones with at least one blocking partner on each round. *Uniform* corresponds to uniformly at random; *Proportional* to probability proportional to  $g_a$ , and *Exponential* to probability proportional to  $\exp(\lambda g_a)$ , where  $g_a$  refers to  $a$ 's maximum net gain among all their blocking partners.

**Predictive measures.** Let  $y_{ij} = 1\{\text{alternative } j \text{ is chosen in choice } i\}$ , where  $i = 1, \dots, N$ , with  $N$  equal to the number of choices in the sample, and  $j = 1, \dots, J$ , with  $J$  equal to the number of alternatives in every choice. Denote the choices in the sample as  $S = \{1, \dots, N\}$ . We specify a parametric model for  $P(y_{ij} = 1 \mid x_{ij}, \beta)$ , where  $x_{ij}$  is a vector of covariates associated to alternative  $j$  in choice  $i$ , and  $\beta$  is an unknown parameter vector. To evaluate the fit of the model, we define a *training dataset*  $D \subset S$  and a *test dataset*  $T \subset S$ . Let  $N_T = |T|$ , where  $N_T \leq N$ . Given the training data  $D$ , we estimate the parameter vector  $\hat{\beta}(D)$  and compute the predicted choice probabilities  $\hat{y}_{ij}(D) = P(y_{ij} = 1 \mid x_{ij}, \hat{\beta}(D))$ . We use the following measures to evaluate the fit of the estimated model on the test data: (i) the mean-squared error of the predicted choice probabilities (*MSE*), (ii) the percentage of choices in which the predicted probability of the alternative chosen in the data is the greatest among all alternatives (*%CorrMaxCP*), and (iii) the average probability of correctly predicting the data (*Avg  $\mathbb{P}(OK \text{ Pred})$* ), respectively given by:

$$\begin{aligned}
MSE(T \mid D) &= \frac{1}{N_T \times J} \sum_{i \in T} \sum_{j=1}^J (y_{ij} - \hat{y}_{ij}(D))^2 \\
\%CorrMaxCP(T \mid D) &= \frac{1}{N_T} \sum_{i \in T} \sum_{j=1}^J 1\{j = \arg \max_j \hat{y}_{ij}(D)\} \cdot 1\{y_{ij} = 1\} \\
Avg \mathbb{P}(OK \text{ Pred})(T \mid D) &= \frac{1}{N_T} \sum_{i \in T} \sum_{j=1}^J (\hat{y}_{ij}(D))^{y_{ij}}
\end{aligned}$$

We evaluate the in-sample fit of the model with the following:

$$\begin{aligned}
MSE(sample) &= MSE(S \mid S) \\
\%CorrMaxCP(sample) &= \%CorrMaxCP(S \mid S) \\
Avg \mathbb{P}(OK \text{ Pred})(sample) &= Avg \mathbb{P}(OK \text{ Pred})(S \mid S)
\end{aligned}$$

To evaluate the fit of the model out of the sample, we compute the same measures in three distinct ways. First, we use two-fold cross validation, which consists in partitioning the choices in the sample into two sets of equal size uniformly at random, denoted by  $I_1$  and  $I_2$ , then using both as training

and test datasets and averaging the resulting measures. That is,

$$MSE(2\text{-fold} \times \text{valid}) = [MSE(I_1 | I_2) + MSE(I_2 | I_1)]/2$$

$$\%CorrMaxCP(2\text{-fold} \times \text{valid}) = [\%CorrMaxCP(I_1 | I_2) + \%CorrMaxCP(I_2 | I_1)]/2$$

$$Avg \mathbb{P}(OK \text{ Pred})(2\text{-fold} \times \text{valid}) = [Avg \mathbb{P}(OK \text{ Pred})(I_1 | I_2) + Avg \mathbb{P}(OK \text{ Pred})(I_2 | I_1)]/2$$

Second, we split the sample into the choices made within the first five rounds of each session,  $S_1$ , and those made during the final five rounds,  $S_2$ . We evaluate the fit of the model in the final rounds, using the data of the first rounds:

$$MSE(\text{future} | \text{present}) = MSE(S_2 | S_1)$$

$$\%CorrMaxCP(\text{future} | \text{present}) = \%CorrMaxCP(S_2 | S_1)$$

$$Avg \mathbb{P}(OK \text{ Pred})(\text{future} | \text{present}) = Avg \mathbb{P}(OK \text{ Pred})(S_2 | S_1)$$

Finally, we also report the fit of the model in the first rounds using the final rounds as training set:

$$MSE(\text{present} | \text{future}) = MSE(S_1 | S_2)$$

$$\%CorrMaxCP(\text{present} | \text{future}) = \%CorrMaxCP(S_1 | S_2)$$

$$Avg \mathbb{P}(OK \text{ Pred})(\text{present} | \text{future}) = Avg \mathbb{P}(OK \text{ Pred})(S_1 | S_2)$$

Table A5: Proposal conditional logit estimations: ordinal vs. cardinal payoffs

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Proposer's PA</i> > 0	0.248 (0.036)	0.228 (0.043)	0.261 (0.053)	0.253 (0.075)	0.229 (0.053)	0.184 (0.063)
<i>Receiver's rank (in prop's list)</i>	-0.074 (0.001)	-0.075 (0.002)	-0.080 (0.005)	-0.087 (0.004)	-0.038 (0.018)	-0.042 (0.018)
$\max\{\text{Prop's PA}, 0\}$	-0.008	-0.015 (0.014)	(0.015)	0.056	0.066 (0.009)	(0.013)
$\min\{\text{Prop's PA}, 0\}$			-0.038 (0.040)			0.104 (0.125)
Treatment	Main	Main	Main	Unilateral	Unilateral	Unilateral
Observations	29,760	29,760	29,760	7,246	7,246	7,246
Adj. $R^2$	0.316	0.316	0.317	0.323	0.329	0.330
<i>MSE (sample)</i>	8.628	8.627	8.648	8.840	8.809	8.803
<i>MSE (2-fold <math>\times</math> valid)</i>	8.630	8.632	8.658	8.845	8.818	8.823
<i>MSE (future   present)</i>	8.209	8.211	8.251	7.928	7.846	7.842
<i>MSE (present   future)</i>	9.242	9.312	9.366	10.508	10.234	10.203
<i>%CorrMaxCP (sample)</i>	45.380	45.380	45.380	40.538	40.538	40.538
<i>%CorrMaxCP (2-fold <math>\times</math> valid)</i>	45.380	45.380	45.380	40.538	40.538	40.538
<i>%CorrMaxCP (future   present)</i>	48.800	48.800	48.800	50.696	50.696	50.696
<i>%CorrMaxCP (present   future)</i>	42.620	42.343	42.113	34.151	34.151	34.151
<i>Avg <math>\mathbb{P}(OK\ Pred)</math> (sample)</i>	34.591	34.586	34.542	32.233	32.629	32.651
<i>Avg <math>\mathbb{P}(OK\ Pred)</math> (2-fold <math>\times</math> valid)</i>	34.571	34.571	34.516	32.223	32.607	32.684
<i>Avg <math>\mathbb{P}(OK\ Pred)</math> (future   present)</i>	33.656	33.659	33.414	32.841	33.686	33.808
<i>Avg <math>\mathbb{P}(OK\ Pred)</math> (present   future)</i>	35.995	35.916	35.951	32.122	31.590	30.754

*Notes.* The table reports average marginal effects of conditional logits. The response variable indicates the receiver of every offer in the data. The table also reports the mean-squared error (*MSE*) of the predicted choice probability, percentage of choices in which the predicted probability of the alternative chosen in the data is the greatest among all alternatives (*%CorrMaxCP*), and the average probability of correctly predicting the data (*Avg  $\mathbb{P}(OK\ Pred)$* ). Each is computed in the estimation sample and out of the sample using: random two-fold cross-validation, predicting the final five rounds with the first five rounds, and the first five rounds using the final five. See the Appendix for more details.

Table A6: Proposal conditional logits estimations with proposer’s cardinal payoffs

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Proposer’s PA &gt; 0</i>	0.162 (0.023)	0.163 (0.019)	0.168 (0.017)	0.060 (0.034)	0.065 (0.034)	0.082 (0.031)
$\max\{\text{Prop’s PA}, 0\}$	0.063 (0.004)	0.059 (0.004)	0.042 (0.003)	0.059 (0.009)	0.057 (0.011)	0.042 (0.008)
$\min\{\text{Prop’s PA}, 0\}$	0.017 (0.016)	0.002 (0.012)	-0.005 (0.012)	0.034 (0.040)	0.032 (0.034)	0.022 (0.036)
<i>Receiver is matched</i>	0.035 (0.013)	0.004 (0.010)	0.010 (0.011)	0.022 (0.009)	-0.000 (0.009)	0.003 (0.011)
<i>Are blocking pair (BP)</i>	0.053 (0.011)	0.063 (0.011)	0.064 (0.012)	0.055 (0.011)	0.049 (0.013)	0.053 (0.015)
$\max\{\text{Rec’s PA}, 0\}$	0.014 (0.003)	0.007 (0.002)	0.011 (0.003)	0.011 (0.003)	0.006 (0.003)	0.010 (0.003)
$\min\{\text{Rec’s PA}, 0\}$	0.038 (0.005)	0.030 (0.005)	0.024 (0.005)	0.018 (0.009)	0.010 (0.008)	0.008 (0.009)
<i>Matched previously</i>		0.024 (0.006)	0.035 (0.007)		0.001 (0.008)	0.015 (0.006)
<i># previous offers (prop. to rec.)</i>		0.010 (0.002)	0.013 (0.003)		-0.009 (0.010)	0.004 (0.004)
<i>Are stable partners (SP)</i>		0.059 (0.004)	0.061 (0.006)		0.024 (0.006)	0.035 (0.009)
<i>Offer is downward</i>			0.041 (0.015)			-0.001 (0.008)
<i>Offer is Gale-Shapley</i>			0.050 (0.018)			0.040 (0.009)
<i>Offer skips someone</i>			-0.042 (0.023)			-0.020 (0.013)

Treatment	Main	Main	Main	Unilateral	Unilateral	Unilateral
Observations	29,760	29,760	29,760	7,246	7,246	7,246
Adj. $R^2$	0.369	0.407	0.438	0.449	0.464	0.504
<i>MSE (sample)</i>	7.918	7.570	7.228	7.051	6.887	6.337
<i>MSE (2-fold <math>\times</math> valid)</i>	7.938	7.603	7.257	7.088	6.969	6.408
<i>MSE (future   present)</i>	7.651	7.344	6.849	5.721	5.646	4.814
<i>MSE (present   future)</i>	8.212	7.989	7.768	8.471	8.745	8.074
<i>%CorrMaxCP (sample)</i>	55.564	56.202	58.933	61.075	59.892	63.011
<i>%CorrMaxCP (2-fold <math>\times</math> valid)</i>	55.360	56.023	58.882	60.860	58.602	62.688
<i>%CorrMaxCP (future   present)</i>	57.371	57.714	62.171	73.538	68.524	76.323
<i>%CorrMaxCP (present   future)</i>	53.506	52.906	54.797	49.037	50.263	53.765
<i>Avg <math>\mathbb{P}(OK\ Pred)</math> (sample)</i>	39.543	42.742	45.714	44.270	45.503	50.302
<i>Avg <math>\mathbb{P}(OK\ Pred)</math> (2-fold <math>\times</math> valid)</i>	39.466	42.654	45.646	44.184	45.249	50.054
<i>Avg <math>\mathbb{P}(OK\ Pred)</math> (future   present)</i>	40.533	43.475	46.887	50.625	52.281	58.977
<i>Avg <math>\mathbb{P}(OK\ Pred)</math> (present   future)</i>	39.386	41.865	44.375	40.090	40.024	43.191

*Notes.* The table reports average marginal effects of conditional logits. The response variable indicates the receiver of every offer in the data. Standard errors are clustered at participant level. The table also reports the mean-squared error (*MSE*) of the predicted choice probability, percentage of choices in which the predicted probability of the alternative chosen in the data is the greatest among all alternatives (*%CorrMaxCP*), and the average probability of correctly predicting the data (*Avg  $\mathbb{P}(OK\ Pred)$* ). Each is computed in the estimation sample and out of the sample using: random two-fold cross-validation, predicting the final five rounds with the first five rounds, and the first five rounds using the final five. See the Appendix for more details.

Table A7: Acceptance binary logit estimations with fixed effects

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Receiver's PA &gt; 0</i>	0.522 (0.034)	0.522 (0.034)	0.472 (0.028)	0.505 (0.103)	0.508 (0.104)	0.556 (0.115)
<i>Receiver is matched</i>	0.167 (0.034)	0.166 (0.034)	0.149 (0.030)	0.091 (0.051)	0.093 (0.052)	0.002 (0.058)
$\max\{\text{Rec's PA}, 0\}$	0.029 (0.009)	0.029 (0.009)	0.028 (0.008)	0.037 (0.018)	0.037 (0.018)	0.017 (0.017)
$\min\{\text{Rec's PA}, 0\}$	0.007 (0.026)	0.008 (0.026)	-0.011 (0.017)	0.452 (0.201)	0.449 (0.202)	0.397 (0.165)
<i>Proposer's rank (in rec's list)</i>	-0.042 (0.004)	-0.042 (0.004)	-0.020 (0.004)	-0.063 (0.008)	-0.064 (0.008)	-0.062 (0.009)
<i>Proposer's PA &gt; 0</i>		-0.011 (0.029)	-0.053 (0.026)		0.115 (0.144)	0.143 (0.112)
<i>Matched previously</i>			0.073 (0.018)			0.137 (0.069)
<i># previous offers (prop. to rec.)</i>			-0.034 (0.010)			-0.057 (0.018)
<i># previous offers (total to rec.)</i>			-0.005 (0.004)			0.030 (0.010)
<i>Are stable partners (SP)</i>			0.132 (0.013)			0.048 (0.030)
Treatment	Main	Main	Main	Unilateral	Unilateral	Unilateral
Observations	3,919	3,919	3,919	877	877	877
Participant fixed effects	1	1	1	1	1	1
Adj. $R^2$	0.455	0.455	0.484	0.495	0.496	0.515
<i>MSE (sample)</i>	11.560	11.558	10.919	10.673	10.682	10.195
<i>MSE (2-fold <math>\times</math> valid)</i>	13.846	13.855	13.411	14.465	14.451	14.961
<i>MSE (future   present)</i>	15.147	15.133	14.073	12.684	12.621	13.141
<i>MSE (present   future)</i>	14.607	14.606	13.700	15.936	16.112	18.741
<i>%CorrMaxCP (sample)</i>	83.669	83.695	84.307	86.129	85.914	86.022
<i>%CorrMaxCP (2-fold <math>\times</math> valid)</i>	79.663	79.714	80.454	79.032	79.247	78.065
<i>%CorrMaxCP (future   present)</i>	78.070	77.955	79.098	80.780	81.337	82.173
<i>%CorrMaxCP (present   future)</i>	77.814	77.814	79.336	72.154	71.278	69.177
<i>Avg <math>\mathbb{P}(OK\ Pred)</math> (sample)</i>	76.775	76.778	78.049	78.557	78.561	79.495
<i>Avg <math>\mathbb{P}(OK\ Pred)</math> (2-fold <math>\times</math> valid)</i>	75.265	75.260	76.410	75.393	75.559	75.703
<i>Avg <math>\mathbb{P}(OK\ Pred)</math> (future   present)</i>	72.916	72.937	74.339	78.208	78.349	78.227
<i>Avg <math>\mathbb{P}(OK\ Pred)</math> (present   future)</i>	75.702	75.702	77.238	74.558	74.258	72.607

*Notes.* The table reports average marginal effects of binary logits with participant fixed effects. The response variable is an indicator of whether an offer was accepted. Standard errors are clustered at participant level. The table also reports the mean-squared error (*MSE*) of the predicted probability, percentage of choices in which the predicted probability of the alternative chosen in the data is the greatest among all alternatives (*%CorrMaxCP*), and the average probability of correctly predicting the data (*Avg  $\mathbb{P}(OK\ Pred)$* ). Each is computed in the estimation sample and out of the sample using: random two-fold cross-validation, predicting the final five rounds with the first five rounds, and the first five rounds using the final five. See the Appendix for more details.

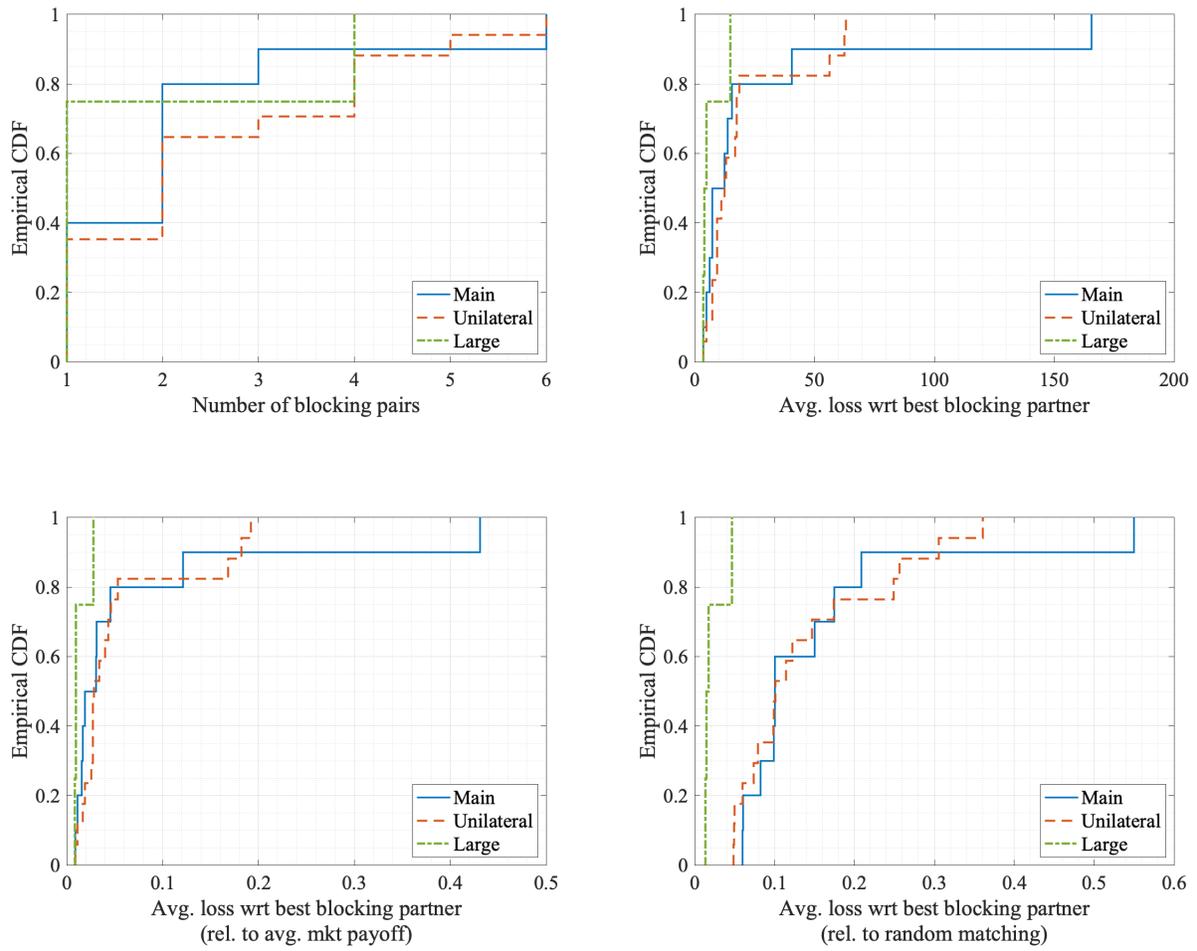


Figure A1: Distance to stability in unstable markets (alternative measures)

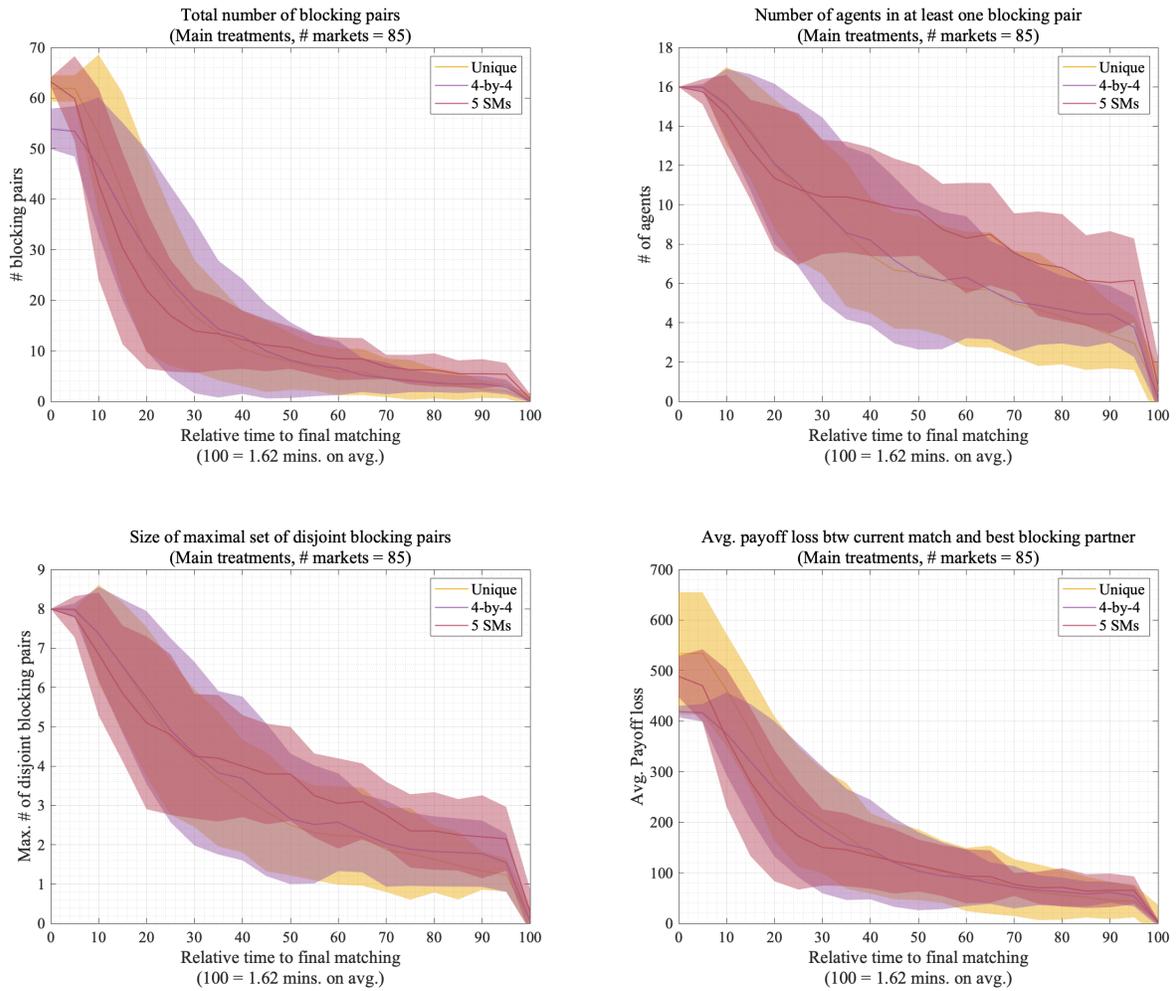


Figure A2: Distance to stable matching over time (by each main treatment)

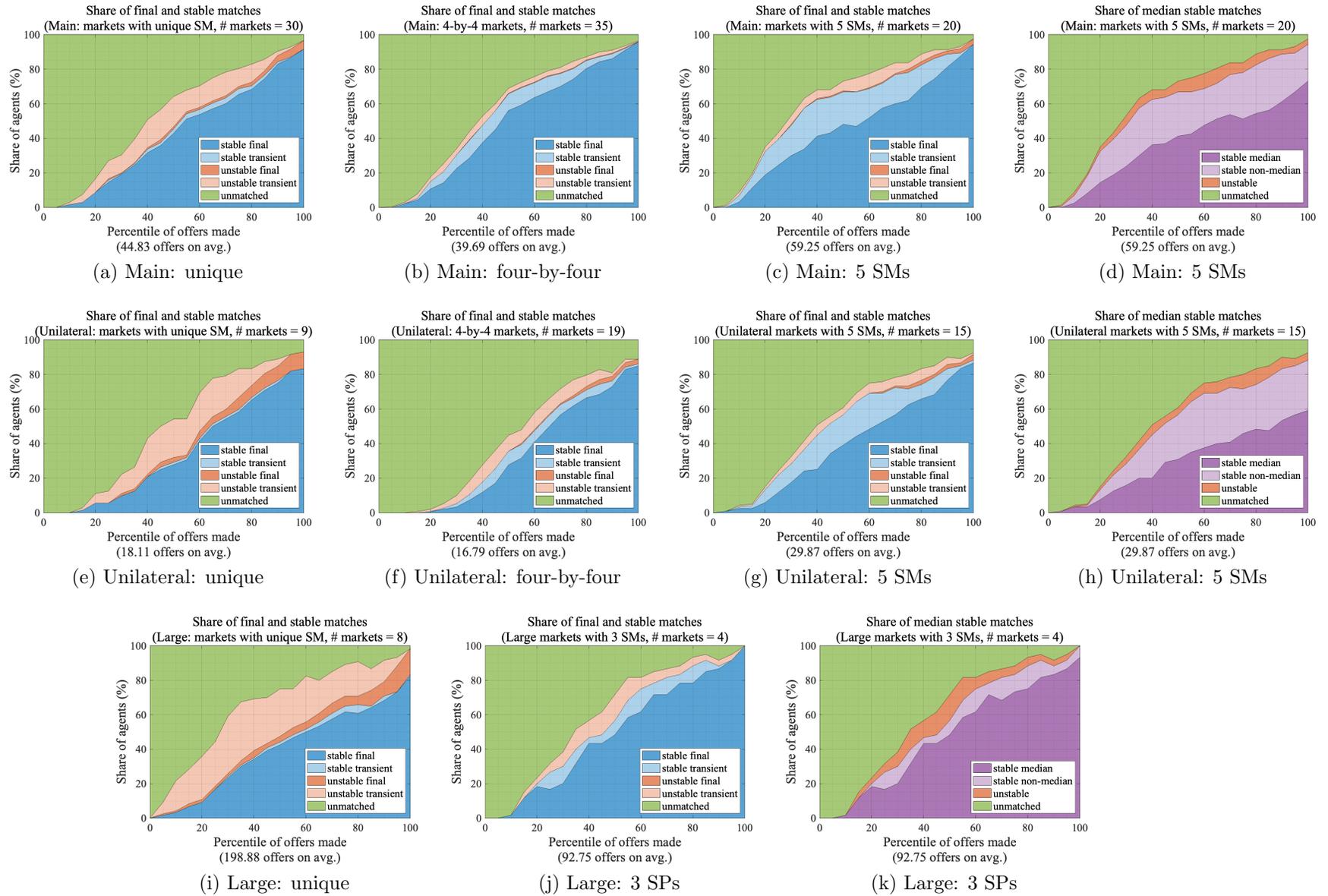
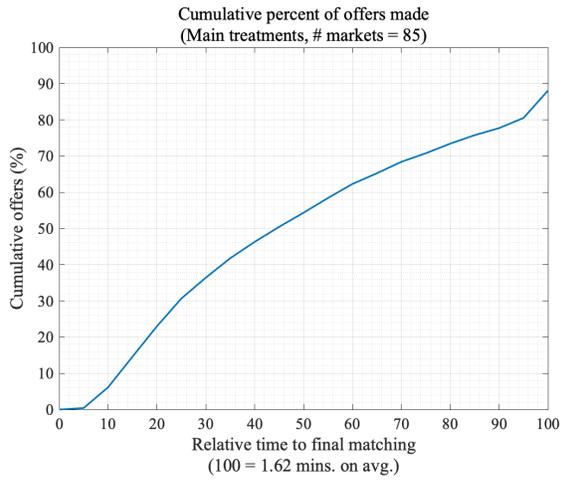
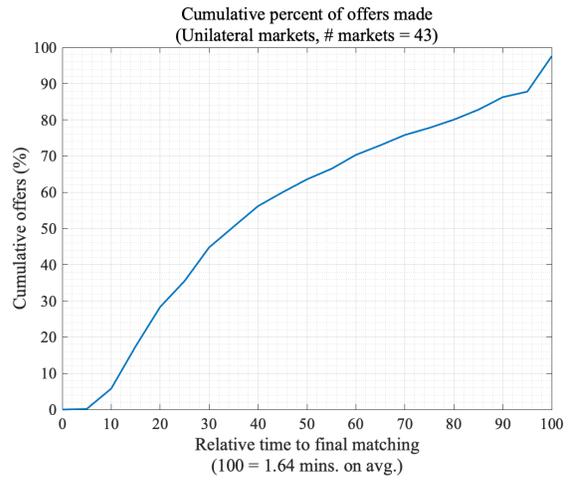


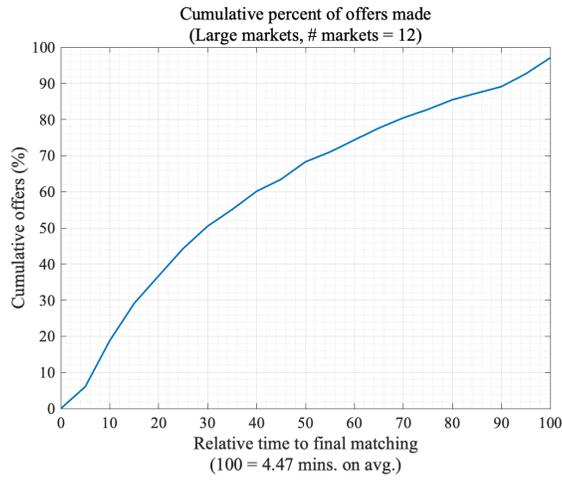
Figure A3: Progression of final, stable, and median stable matches as offers are made



(a) Main



(b) Unilateral



(c) Large

Figure A4: Percentage of offers made over time

Table A8: Proposing and accepting behavior across time in unilateral markets

	<i>1st/3</i>	<i>2nd/3</i>	<i>3rd/3</i>	<i>All</i>
<i>% offers</i>	53.4	24.5	22.0	100.0
<i>% accepted offers</i>	(68.8)	(68.8)	(63.4)	(68.1)
<i>offers per minute (avg.)</i>	25.7	6.2	3.2	14.5
<i>matches per minute (avg.)</i>	15.6	4.0	2.2	10.0
<i>% matches formed are repeated</i>	1.4	9.6	25.3	8.6
<i>% matches formed break</i>	14.2	8.3	2.7	10.5
<i>% break   final</i>	9.2	3.8	0.6	5.0
<i>% break   stable</i>	11.1	4.8	2.6	8.0
<i>Characteristics of offers</i>				
<i>(% accepted)</i>				
<i>% offers to blocking pairs</i>	93.2	82.3	70.5	85.4
	(73.4)	(83.7)	(92.1)	(78.7)
<i>% offers only-proposer beneficial</i>	6.2	17.3	28.0	13.7
	(6.0)	(0.0)	(5.2)	(4.0)
<i>% offers are repeated</i>	4.1	27.4	49.6	19.8
	(66.0)	(49.9)	(51.8)	(51.7)
<i>% offers to previous match</i>	1.3	10.1	29.8	10.1
	(68.8)	(46.7)	(58.2)	(56.1)
<i>In markets with three stable partners:</i>				
<i>% offers to best stable partner</i>	35.7	28.9	25.5	30.6
	(55.8)	(40.5)	(28.1)	(47.8)
<i>% offers to median stable partner</i>	33.1	34.0	26.8	32.9
	(81.9)	(68.8)	(70.9)	(79.6)
<i>% offers to worst stable partner</i>	6.3	12.5	9.3	9.0
	(93.8)	(83.3)	(87.5)	(85.6)

*Notes.* The table reports averages across unilateral markets (“thirds” are relative to the time of the last offer) of: avg. number of offers made and accepted per minute; % of repeated matches; % of matches that break; % of offers made and accepted (% accepted shown in parentheses): to blocking partners, that are only beneficial to the proposer, repeated, and to a previous match. For markets that have five stable matchings and three stable partners, the table also reports the average % of offers made and accepted (% accepted shown in parentheses) to the proposer’s best, median, and worst stable partner.

Table A9: Summary statistics of dynamics in main treatment with 5 stable matchings and 3 stable partners, by cardinal payoffs and final matching

	20–20	20–20 <sub>+100</sub>	20–70	70–70	<i>Stable median</i>	<i>Stable non-median</i>	<i>Unstable</i>
<i># Mkts.</i>	5 (25.0%)	5 (25.0%)	5 (25.0%)	5 (25.0%)	12 (60.0%)	3 (15.0%)	5 (25.0%)
<i># offers</i>	69.0	67.6	49.4	51.0	56.2	58.3	67.0
<i># offers per agent (avg.)</i>	4.3	4.2	3.1	3.2	3.5	3.6	4.2
<i># matches</i>	30.2	31.2	18.0	19.0	22.7	22.3	30.6
<i># matches per agent (avg.)</i>	3.8	3.9	2.2	2.4	2.8	2.8	3.8
<i>time to final matching (mins.)</i>	2.85	2.77	1.56	1.72	2.07	2.21	2.60
<i>time to last proposal (mins.)</i>	2.98	3.60	2.55	2.44	2.56	3.31	3.45
<i>% accepted offers</i>	42.7	45.4	35.4	38.0	39.5	37.6	44.1
<i>% offers are repeated</i>	36.1	39.0	35.3	36.9	37.0	36.7	36.5
<i>% accepted   repeated</i>	31.0	35.4	22.6	20.3	26.2	22.8	32.8
<i>% matches are repeated</i>	27.5	34.6	20.2	26.7	27.2	18.7	32.4
<i>% offers to blocking pairs</i>	72.6	56.8	63.8	60.6	63.2	65.3	62.8
<i>% accepted   to BP</i>	57.8	68.1	53.6	58.5	59.2	55.2	62.8
<i>% offers only-proposer beneficial</i>	26.8	32.9	36.2	38.7	36.0	34.7	27.3
<i>% accepted   only-prop beneficial</i>	2.3	5.5	3.3	5.3	3.9	4.0	4.6
<i>% proposer is active</i>	90.8	83.9	84.0	80.1	84.3	84.3	85.9
<i>% offer is downward</i>	59.3	58.9	62.8	63.4	61.7	61.4	59.7
<i>% offer is Gale-Shapley</i>	30.0	34.3	31.0	31.9	30.8	35.4	32.2
<i>% offer skips someone</i>	41.9	40.1	42.9	39.2	41.1	33.6	45.4
<i>% broken match   final</i>	12.7	14.9	7.9	7.4	12.3	5.2	10.3
<i>% final match   broken</i>	36.2	25.0	39.3	25.7	37.2	25.0	18.0
<i>% broken match   stable</i>	13.0	21.9	9.3	14.1	15.3	5.0	18.6
<i>% stable match   broken</i>	65.8	70.3	71.4	66.7	75.0	41.7	71.1

*Notes.* The table reports averages across markets in our main treatment with five stable matchings and three stable partners, split by (a) cardinal payoffs (first four columns), and (b) whether the market reached a median stable matching, a non-median stable matching, or an unstable matching (last three columns).

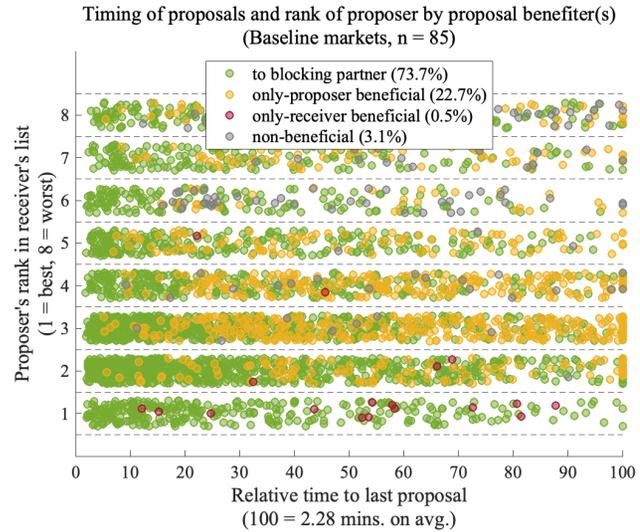
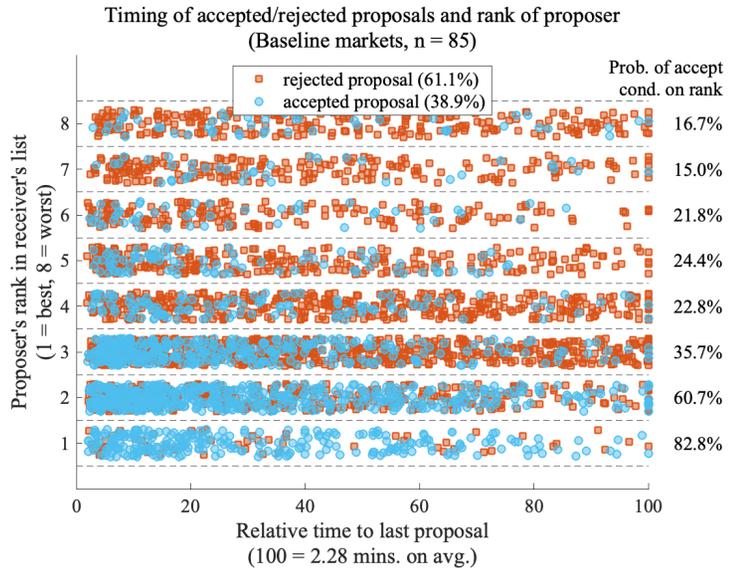
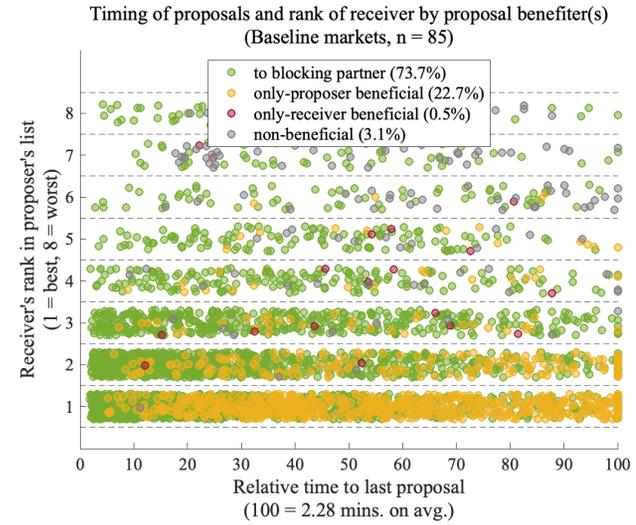
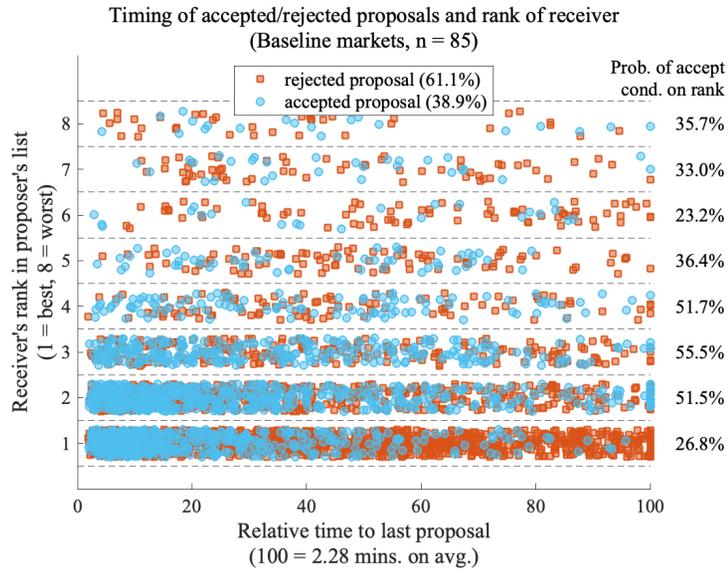
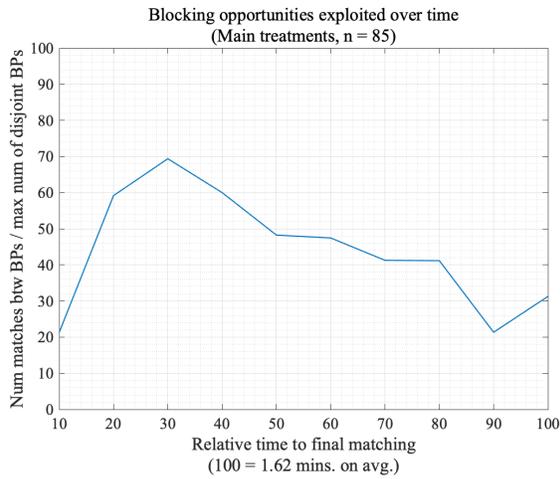
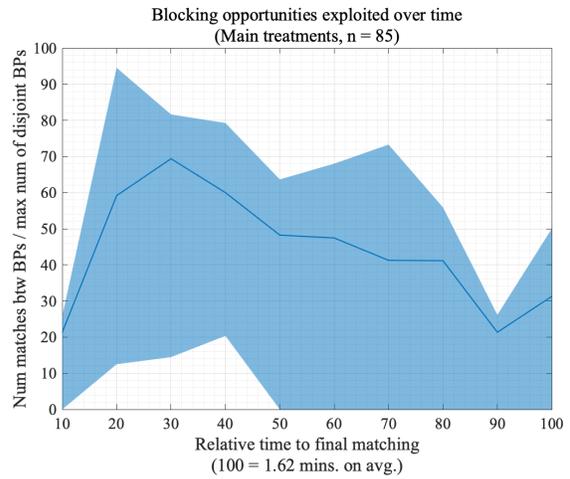


Figure A5: Timing of offers, and rank of receiver (top two panels) and of proposer (bottom two panels)



(a) Avg. across main treatments



(b) Avg. across main treatments (25p-75p)

Figure A6: Blocking opportunities exploited over time

*Notes.* We split every market in ten segments of equal duration. Within each segment, we compute the ratio between the number of proposals accepted by a blocking partner within this segment and the weighted average of the maximal number of disjoint blocking pairs in the market (weighted across time). The Figure reports the average of this ratio across all markets in our main treatments across the ten segments. The right panel plots an area covering the mass between the 25th and 75th percentiles across all markets in our main treatments.

Table A10: Description of first proposals: main and auxiliary treatments

	<i>Unilateral</i>	<i>Main</i>	<i>Large</i>	<i>All</i>
<i>Proposer's and receiver's first proposal</i>				
<i># proposals per mkt</i>	5.6	5.0	8.3	5.5
<i>% accepted</i>	71.4	59.8	52.8	62.8
<i>% to blocking pairs</i>	100.0	100.0	100.0	100.0
<i>% to stable partners</i>	64.0	62.5	37.3	60.8
<i>% to top choice</i>	63.7	55.6	15.6	54.7
<i>First proposal made by proposer</i>				
<i># proposals per mkt</i>	8.0	14.2	27.8	13.5
<i>% accepted</i>	67.2	52.2	40.9	55.8
<i>% to blocking pairs</i>	95.1	88.5	93.1	90.9
<i>% to stable partners</i>	62.5	60.0	37.9	58.9
<i>% to top choice</i>	64.2	58.8	19.9	57.1

*Notes.* The table reports average characteristics of first proposals across our main and auxiliary treatments, where we use two definitions of a “first proposal.” First, we consider the proposals which are the first proposal made by the proposer *and* the first proposal involving the receiver (as receiver or proposer). Second, we consider proposals that are the first proposal made by the proposer (but in which the receiver may have already been involved in a prior proposal, as receiver or proposer).

Table A11: Description of first proposals in markets with five stable matchings and three stable partners (main treatment)

	<i>Stable median</i>	<i>Stable non-median</i>	<i>Unstable</i>
<i>Mkts.</i>	12 (60%)	3 (15%)	5 (25%)
<i>Proposer's and receiver's first proposal</i>			
<i># proposals per mkt</i>	5.1	4.7	5.0
<i>% accepted</i>	57.8	25.0	47.0
<i>% to blocking pairs</i>	100.0	100.0	100.0
<i>% to stable partners</i>	73.1	66.7	55.3
<i>% to best stable partner</i>	33.8	38.9	30.0
<i>% to median stable partner</i>	37.9	27.8	11.3
<i>% to worst stable partner</i>	1.4	0.0	14.0
<i>% to top choice</i>	33.7	47.2	55.3
<i>First proposal made by proposer</i>			
<i># proposals per mkt</i>	14.8	15.3	14.4
<i>% accepted</i>	47.7	40.8	49.7
<i>% to blocking pairs</i>	88.7	91.1	87.2
<i>% to stable partners</i>	73.7	56.2	61.8
<i>% to best stable partner</i>	35.3	32.1	37.1
<i>% to median stable partner</i>	35.6	17.9	12.4
<i>% to worst stable partner</i>	2.8	6.2	12.3
<i>% to top choice</i>	38.3	60.7	44.4

*Notes.* The table reports average characteristics of first proposals in the markets of our main treatment with five stable matchings and three stable partners, differentiating them by whether they converged to the median stable matching, a non-median stable matching, or an unstable matching, where we use two definitions of a “first proposal.” First, we consider the proposals which are the first proposal made by the proposer *and* the first proposal involving the receiver (as receiver or proposer). Second, we consider proposals that are the first proposal made by the proposer (but in which the receiver may have already been involved in a prior proposal, as receiver or proposer).

Table A12: Individual behavior by final match in markets with five stable matchings and three stable partners (main treatment)

	<i>Stable</i>	<i>Best</i>	<i>Median</i>	<i>Worst</i>	<i>Unstable</i>
<i># agents</i>	15.5	1.7	12.1	1.7	0.5
<i>% agents</i>	96.9	10.6	75.6	10.6	3.1
<i># proposals made</i>	3.9	3.2	4.6	3.6	5.8
<i>% accepted (of made)</i>	49.1	52.3	47.6	54.0	35.8
<i># proposals received</i>	3.8	4.5	4.0	3.3	5.5
<i>% accepted (of received)</i>	45.8	40.5	47.8	48.4	62.5
<i>% proposals to blocking pairs</i>	73.2	67.6	71.5	82.6	66.1
<i># proposals per minute</i>	3.5	3.3	3.4	3.6	3.3

*Notes.* The table reports averages across all agents and proposals made in markets with five stable matchings and three stable partners in our main treatment, differentiating them by whether the agent or the proposer finalized the market matched to: as stable partner, their best stable partner, their median stable partner, their worst stable partner, or an unstable partner.

290, 200	410, 300	450, 450	490, 560	250, 340	530, 420	370, 410	330, 190
420, 440	220, 180	340, 330	260, 360	460, 220	300, 300	500, 490	380, 390
490, 360	410, 380	330, 250	210, 400	450, 420	250, 340	370, 290	290, 270
330, 160	450, 420	410, 490	250, 440	210, 260	290, 380	490, 330	370, 230
300, 280	260, 460	380, 210	420, 480	460, 460	500, 500	220, 210	340, 150
510, 320	590, 260	430, 290	550, 600	310, 180	390, 260	350, 250	470, 110
190, 240	230, 220	390, 410	110, 520	270, 380	150, 460	310, 450	350, 350
400, 400	280, 340	480, 370	240, 640	360, 300	200, 540	320, 370	440, 310

(a) Unique stable matching

500, 350	480, 310	460, 440	440, 340	400, 390	420, 390	540, 290	520, 380
470, 330	450, 350	490, 320	350, 380	390, 370	370, 370	410, 310	430, 420
510, 270	490, 250	430, 380	450, 300	570, 430	550, 450	530, 370	470, 340
510, 250	490, 230	430, 420	550, 400	530, 490	570, 410	470, 270	450, 320
510, 310	410, 370	390, 340	470, 320	450, 450	370, 490	490, 330	430, 360
460, 290	440, 290	500, 400	520, 360	380, 470	480, 470	420, 410	400, 440
430, 370	490, 330	510, 300	390, 420	370, 510	470, 350	450, 350	410, 300
460, 390	440, 270	520, 360	480, 440	540, 410	400, 430	420, 390	500, 400

(b) Multiple stable matchings

Figure A7: Examples of payoff matrices