# Reversing Reserves: Online Appendix

Parag Pathak, Alex Rees-Jones, and Tayfun Sönmez

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## A Data Access

Data files and a survey codebook are available at https://uasdata.usc.edu/index.php. Our study is listed as UAS survey 210. The data files will remain under embargo until January, 2021, but will be publicly available at that point forward.

## B Preregistration

The following pages provide a copy of our preregistration.

# Reversing Reserves: UAS Study (#31773)

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**Author(s)**
Alex Rees-Jones (Cornell) - arr34@cornell.edu
Parag Pathak (MIT) - ppathak@mit.edu
Tayfun Sonmez (Boston College) - tayfun.sonmez@bc.edu

**1) Have any data been collected for this study already?**
No, no data have been collected for this study yet.

**2) What's the main question being asked or hypothesis being tested in this study?**
Affirmative action policies are often implemented by reserving seats for targeted groups. In a matching procedure, the order of processing of these reserve seats can significantly influence the targeted group's admission rate. Processing these seats first provides a "minimum guarantee," which can have little effect on the outcome if the minimum number of seats guaranteed is lower than would exist without the reserve. In contrast, processing these seats last provides an "over and above guarantee," which assures that some additional seats will be given to the targeted group.

We believe that the importance of processing order is often misunderstood and viewed as counter intuitive. In many settings, letting someone "go first" has advantages, and we believe that this leads individuals to at times support ineffective affirmative action policies in reserve procedures.

In this study, we present simple scenarios designed to reveal subjects' understanding of the importance of processing order.

**3) Describe the key dependent variable(s) specifying how they will be measured.**
The key dependent variable is an incentivized choice between two options for how reserve seats can be processed. The subject is put in an experimental matching task that governs the bonus earned for the experiment. They are identified as part of a group favored by an affirmative action policy and are given two options for how that policy is implemented. The options involve different numbers of seats reserved, and differ on whether the seats are processed first or last. Each subject faces six of these scenarios.

**4) How many and which conditions will participants be assigned to?**
The key randomization in the experiment is the number of seats reserved in the scenarios described above. The subject faces 6 scenarios, in which the number of seats reserved in the "process last" option take the values {40, 44, 48, 52, 56, 60}. In each of these scenarios, the number of seats reserved in the "process first" option is randomly drawn according to the following rubric. Given a number of "process last" seats, there are two thresholds of interest for the number of "process first" seats: the threshold where the same number of seats are reserved, and the threshold where the consequences of the policies are identical. For each of these thresholds (T), we uniformly sample seat numbers taking the values of {T-5, T-3, T-1, T+1, T+3, T+5}, as well as for a single point approximately halfway between the two thresholds.

Beyond the randomization of seat numbers, a key condition of interest is the framing of the scenarios. There are two versions of the prompts: one framed as a problem about admissions to a school, and one framed as a problem about the granting of work visas. We include these two conditions because they reflect two key field applications of the reserve policies we study. We do not have ex-ante hypotheses about whether one setting would be more susceptible to suboptimal behavior.

There are also several "conditions" in the sense that they involve randomization, but which are included simply to test for worrying confounds. Within the experiment, the ordering of choice options is randomized. Furthermore, we describe the two groups as the blue and green group, and randomize which group is disadvantaged.

**5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.**
We are interested in the rate of optimal choices in these scenarios. We believe that there will be a tendency to select the "process first" option when it is against the subjects' best interests. We additionally believe this is partially driven by a tendency to make the choice purely based on the number of seats reserved without attending to the processing order.

Define a dummy variable (Y) that takes the value of 1 if the subject chooses the "process first" option. Denote the randomly generated number of seats for the "process first" option as S. Define two thresholds: T1) the number of seats in the "process last" option, and T2) the minimum number of seats assigned in the process first option that results in it becoming the optimal choice.

As a primary test of reliance on each threshold, we will compare the mean of Y for the scenarios when the sampled number of "process first" seats is drawn from {T-5, T-3, T-1} as compared to the mean when the number of "process first" seats is drawn from {T+1, T+3, T+5}. We predict that we will see a larger difference in means occurring at the threshold associated with a larger number of reserved seats than we do at the threshold associated with the determination of the optimal choice.

We will explore the robustness of these results using a variety of regression-discontinuity approaches. Our regressions will take the form Y=constant + beta1*(S>=T1) + beta2*(S>=T2) +f(S) +epsilon, and will apply a variety of alternative means of estimating f(S).

As a baseline, we will conduct the analyses above pooling together both the “school” and “visa” version of these scenarios and pooling together the 6 iterations of the scenario presented. We will also reconduct these analyses restricting the data to either the school or visa version, and by restricting the data to each of the 6 iterations a subject faced.

**6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.**
Our analyses will be based on all observations flagged as complete by the Understanding America Study.

**7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.**
The Understanding America Study will solicit responses until 1000 complete responses are obtained.

**8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)**
a) We will conduct exploratory analyses of the relationship between optimal choice in the scenario and the demographic predictor variables available in the Understanding America Study master data. These will take the form of logit regressions, in which the dependent variable is a dummy variable taking the value of 1 when the subjects chose the option that was most advantageous to themselves.

b) We include a set of 4 comprehension questions at the beginning of the study. As a baseline, we will include all subjects who complete the survey, even those that fail the comprehension check. We will explore robustness of results to the exclusion of subjects who fail these questions.

c) In all analyses containing multiple observations from the same subject, we will cluster standard errors at the subject level.

d) The UAS provides sample weights, the use of which improves the representativeness of the sample. For all of our analyses described above, we will conduct both the standard, unweighted version of the analysis as well as the weighted version of the analysis. To the extent that results diverge, we consider the weighted version to be the estimate of primary interest.

# C Supplemental Figures and Tables

Table A1: Estimates of Choice Functions Governing Policy Preferences (by Scenario)

Panel A: School-Choice Scenario

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| $\beta^n$: $N_{ij}$ | 0.43 | | 0.38 | | 0.40 | 0.40 | 0.40 | 0.38 |
| | (0.03) | | (0.06) | | (0.03) | (0.05) | (0.03) | (0.06) |
| $\beta^*$: $O_{ij}$ | | 0.04 | | 0.08 | 0.01 | 0.09 | 0.00 | 0.07 |
| | | (0.02) | | (0.05) | (0.03) | (0.04) | (0.03) | (0.05) |
| Control for $s^{RF}$ (f) | Sample Restriction | | Local Poly | | Cubic Spline | | 5th order Poly | |
| $s_{RL}$ Fixed Effects | No | | No | | Yes | | Yes | |
| $s_{RL}$ FEs × f | No | No | No | No | No | Yes | No | Yes |
| Respondents | 498 | 498 | 511 | 511 | 511 | 511 | 511 | 511 |
| N | 1437 | 1358 | 3066 | 3066 | 3066 | 3066 | 3066 | 3066 |
| $R^2$ | 0.185 | 0.003 | | | 0.220 | 0.226 | 0.220 | 0.225 |

Panel B: Visa-Allocation Scenario

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| $\beta^n$: $N_{ij}$ | 0.38 | | 0.40 | | 0.33 | 0.35 | 0.33 | 0.35 |
| | (0.03) | | (0.06) | | (0.03) | (0.05) | (0.03) | (0.05) |
| $\beta^*$: $O_{ij}$ | | 0.03 | | -0.04 | -0.03 | -0.03 | -0.02 | -0.01 |
| | | (0.02) | | (0.05) | (0.03) | (0.04) | (0.03) | (0.05) |
| Control for $s^{RF}$ (f) | Sample Restriction | | Local Poly | | Cubic Spline | | 5th order Poly | |
| $s_{RL}$ Fixed Effects | No | | No | | Yes | | Yes | |
| $s_{RL}$ FEs × f | No | No | No | No | No | Yes | No | Yes |
| Respondents | 492 | 493 | 502 | 502 | 502 | 502 | 502 | 502 |
| N | 1428 | 1351 | 3012 | 3012 | 3012 | 3012 | 3012 | 3012 |
| $R^2$ | 0.142 | 0.001 | | | 0.179 | 0.182 | 0.180 | 0.183 |

Notes: This table reports regressions of an indicator for choosing the RF policy on controls for the number of seats reserved. Each panel reproduces Table 2, restricting the data to one of the two scenarios. The top panel presents results for the school-choice scenario, and the bottom panel presents results for the visa-allocation scenario. Standard errors, clustered by respondent, are reported in parentheses.

Table A2: Cog. Performance and Naïve-Choice-Function Adoption: Continuous Measures

| | (1) Number Sequence | (2) Analogies | (3) Picture Vocab. | (4) Subjective Numeracy |
|---|---|---|---|---|
| $\alpha$: Constant | 0.29 | 0.29 | 0.29 | 0.29 |
| | (0.01) | (0.01) | (0.01) | (0.01) |
| $\beta^n$: $N_{ij}$ | 0.40 | 0.40 | 0.40 | 0.40 |
| | (0.02) | (0.02) | (0.02) | (0.02) |
| $\gamma$: Cog. Perf. Measure | -0.10 | -0.09 | -0.05 | -0.07 |
| | (0.01) | (0.01) | (0.01) | (0.01) |
| $\delta$: Interaction | 0.13 | 0.11 | 0.07 | 0.09 |
| | (0.02) | (0.02) | (0.02) | (0.02) |
| Respondents | 968 | 940 | 955 | 911 |
| N | 2811 | 2716 | 2768 | 2632 |
| $R^2$ | 0.182 | 0.178 | 0.164 | 0.172 |

Notes: This table reproduces the analysis of the UAS cognitive performance measures appearing in panel B of Table 3. Instead of using a binary, above/below median measure of cognitive performance as in Table 3, this table presents results with the continuous underlying measure. All measures are standardized, so the terms $\gamma$ and $\delta$ may be interpreted as the impact of a one-standard-deviation increase in cognitive performance. Standard errors, clustered by respondent, are reported in parentheses.

Table A3: Cog. Performance and Optimal-Choice-Function Adoption: Continuous Measures

| | (1) Number Sequence | (2) Analogies | (3) Picture Vocab. | (4) Subjective Numeracy |
|---|---|---|---|---|
| $\alpha$: Constant | 0.79 | 0.79 | 0.79 | 0.80 |
| | (0.01) | (0.01) | (0.01) | (0.01) |
| $\beta^*$: $O_{ij}$ | 0.03 | 0.03 | 0.04 | 0.03 |
| | (0.02) | (0.02) | (0.02) | (0.02) |
| $\gamma$: Cog. Perf. Measure | 0.07 | 0.07 | 0.04 | 0.05 |
| | (0.01) | (0.01) | (0.01) | (0.01) |
| $\delta$: Interaction | 0.01 | 0.01 | 0.00 | -0.00 |
| | (0.02) | (0.02) | (0.02) | (0.02) |
| Respondents | 969 | 940 | 956 | 913 |
| N | 2642 | 2569 | 2613 | 2502 |
| $R^2$ | 0.039 | 0.039 | 0.014 | 0.019 |

Notes: This table reproduces the analysis of the UAS cognitive performance measures appearing in panel B of Table 4. Instead of using a binary, above/below median measure of cognitive performance as in Table 4, this table presents results with the continuous underlying measure. All measures are standardized, so the terms $\gamma$ and $\delta$ may be interpreted as the impact of a one-standard-deviation increase in cognitive performance. Standard errors, clustered by respondent, are reported in parentheses.

## C.1 Robustness to Use of Survey Weights

Table A4: Estimates of Choice Functions Governing Policy Preferences (with Weights)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| $\beta^n$: $N_{ij}$ | 0.39 | | 0.37 | | 0.34 | 0.38 | 0.34 | 0.36 |
| | (0.03) | | (0.06) | | (0.03) | (0.05) | (0.03) | (0.05) |
| $\beta^*$: $O_{ij}$ | | 0.03 | | -0.02 | -0.01 | -0.02 | 0.00 | -0.01 |
| | | (0.02) | | (0.05) | (0.03) | (0.05) | (0.03) | (0.05) |
| Control for $s^{RF}$ (f) | Sample Restriction | | Local Poly | | Cubic Spline | | 5th order Poly | |
| $s_{RL}$ Fixed Effects | No | | No | | Yes | | Yes | |
| $s_{RL}$ FEs × f | No | No | No | No | No | Yes | No | Yes |
| Respondents | 990 | 991 | 1013 | 1013 | 1013 | 1013 | 1013 | 1013 |
| N | 2865 | 2709 | 6078 | 6078 | 6078 | 6078 | 6078 | 6078 |
| $R^2$ | 0.155 | 0.001 | | | 0.169 | 0.174 | 0.169 | 0.174 |

Notes: This table reports regressions of an indicator for choosing the RF policy on controls for the number of seats reserved. All analyses are identical to those in Table 2, modified only to weight observations according to the procedures described in Section 6.3.1. Standard errors, clustered by respondent, are reported in parentheses.

Table A5: Cross-Group Differences in Naïve-Choice-Function Adoption (with Weights)

Panel A: Demographic Groups

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Group Indicates: | Male | Married | Working | High Education | High Income | High Age |
| $\alpha$: Constant | 0.31 | 0.33 | 0.34 | 0.38 | 0.36 | 0.29 |
| | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) |
| $\beta^n$: $N_{ij}$ | 0.38 | 0.33 | 0.35 | 0.31 | 0.29 | 0.41 |
| | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) |
| $\gamma$: Group | -0.02 | -0.06 | -0.06 | -0.18 | -0.11 | 0.03 |
| | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) |
| $\delta$: Interaction | 0.02 | 0.11 | 0.07 | 0.20 | 0.19 | -0.03 |
| | (0.06) | (0.06) | (0.06) | (0.05) | (0.06) | (0.06) |
| Respondents | 990 | 990 | 990 | 990 | 988 | 989 |
| N | 2865 | 2865 | 2865 | 2865 | 2859 | 2863 |
| $R^2$ | 0.155 | 0.158 | 0.156 | 0.171 | 0.163 | 0.155 |

Panel B: Cognitive Performance Measures

| | (1) | (2) | (3) | (4) | | (5) |
|---|---|---|---|---|---|---|
| Cog. Measure: | Number Sequence | Analogies | Picture Vocab. | Subjective Numeracy | | Comp. Check |
| $\alpha$: Constant | 0.37 | 0.38 | 0.33 | 0.34 | | 0.39 |
| | (0.03) | (0.03) | (0.03) | (0.03) | | (0.03) |
| $\beta^n$: $N_{ij}$ | 0.31 | 0.30 | 0.37 | 0.33 | | 0.23 |
| | (0.04) | (0.04) | (0.04) | (0.04) | | (0.04) |
| $\gamma$: High Cog. Perf. | -0.16 | -0.19 | -0.06 | -0.09 | | -0.21 |
| | (0.04) | (0.04) | (0.04) | (0.04) | | (0.04) |
| $\delta$: Interaction | 0.18 | 0.24 | 0.03 | 0.13 | | 0.37 |
| | (0.06) | (0.05) | (0.06) | (0.06) | | (0.05) |
| Respondents | 968 | 943 | 956 | 914 | | 990 |
| N | 2811 | 2724 | 2772 | 2640 | | 2865 |
| $R^2$ | 0.165 | 0.163 | 0.146 | 0.156 | | 0.189 |

Notes: This table reports regressions analogous to that in column 1 of Table 2, but additionally including a control for group affiliation and an interaction with the estimated discontinuity. All analyses are identical to those in Table 3, modified only to weight observations according to the procedures described in Section 6.3.1. Standard errors, clustered by respondent, are reported in parentheses.

Table A6: Cross-Group Differences in Optimal-Choice-Function Adoption (with Weights)

Panel A: Demographic Groups

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Group Indicates: | Male | Married | Working | High Education | High Income | High Age |
| $\alpha$: Constant | 0.78 | 0.74 | 0.75 | 0.75 | 0.70 | 0.77 |
| | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) |
| $\beta^*$: $O_{ij}$ | 0.04 | 0.05 | 0.03 | -0.01 | 0.02 | 0.04 |
| | (0.03) | (0.04) | (0.04) | (0.04) | (0.04) | (0.03) |
| $\gamma$: Group | -0.01 | 0.07 | 0.04 | 0.05 | 0.13 | 0.02 |
| | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) |
| $\delta$: Interaction | -0.02 | -0.04 | -0.00 | 0.07 | 0.01 | -0.02 |
| | (0.05) | (0.05) | (0.05) | (0.05) | (0.05) | (0.05) |
| Respondents | 991 | 991 | 991 | 991 | 989 | 990 |
| N | 2709 | 2709 | 2709 | 2709 | 2703 | 2705 |
| $R^2$ | 0.002 | 0.005 | 0.003 | 0.015 | 0.027 | 0.001 |

Panel B: Cognitive Performance Measures

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| Cog. Measure: | Number Sequence | Analogies | Picture Vocab. | Subjective Numeracy | Comp. Check |
| $\alpha$: Constant | 0.74 | 0.73 | 0.77 | 0.73 | 0.69 |
| | (0.03) | (0.03) | (0.02) | (0.03) | (0.03) |
| $\beta^*$: $O_{ij}$ | 0.01 | 0.01 | 0.01 | 0.05 | 0.03 |
| | (0.03) | (0.03) | (0.03) | (0.03) | (0.04) |
| $\gamma$: High Cog. Perf. | 0.10 | 0.11 | 0.02 | 0.11 | 0.19 |
| | (0.04) | (0.04) | (0.04) | (0.04) | (0.03) |
| $\delta$: Interaction | 0.03 | 0.02 | 0.04 | -0.04 | 0.01 |
| | (0.05) | (0.05) | (0.05) | (0.05) | (0.04) |
| Respondents | 969 | 943 | 957 | 916 | 991 |
| N | 2642 | 2579 | 2614 | 2510 | 2709 |
| $R^2$ | 0.018 | 0.022 | 0.003 | 0.015 | 0.058 |

Notes: This table reports regressions analogous to that in column 2 of Table 2, but additionally including a control for group affiliation and an interaction with the estimated discontinuity. All analyses are identical to those in Table 4, modified only to weight observations according to the procedures described in Section 6.3.1. Standard errors, clustered by respondent, are reported in parentheses.

Table A7: Cross-Group Differences in Rate of Payoff-Maximizing Choice (with Weights)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| High Performance: | 0.05 | | | 0.05 | 0.07 | 0.06 | |
| Number Sequences | (0.02) | | | (0.02) | (0.02) | (0.02) | |
| High Performance: | | 0.03 | | 0.01 | 0.02 | 0.02 | |
| Analogies | | (0.02) | | (0.02) | (0.02) | (0.02) | |
| High Performance: | | | 0.02 | 0.01 | 0.01 | 0.01 | |
| Picture Vocab. | | | (0.02) | (0.02) | (0.02) | (0.02) | |
| High Performance: | | | | | -0.03 | -0.04 | |
| Subjective Numeracy | | | | | (0.02) | (0.02) | |
| Passed Comp. Check | | | | | -0.03 | -0.04 | |
| | | | | | (0.02) | (0.02) | |
| Male | | | | | | 0.00 | 0.01 |
| | | | | | | (0.02) | (0.02) |
| Married | | | | | | -0.02 | -0.03 |
| | | | | | | (0.02) | (0.02) |
| Working | | | | | | 0.03 | 0.02 |
| | | | | | | (0.02) | (0.02) |
| High Education | | | | | | 0.06 | 0.06 |
| | | | | | | (0.02) | (0.02) |
| High Income | | | | | | -0.01 | -0.02 |
| | | | | | | (0.02) | (0.02) |
| High Age | | | | | | 0.00 | -0.01 |
| | | | | | | (0.02) | (0.02) |
| Respondents | 991 | 964 | 979 | 964 | 921 | 917 | 1009 |
| N | 5946 | 5784 | 5874 | 5784 | 5526 | 5502 | 6054 |

Notes: This table reports average marginal effects of logit regressions predicting the choice of the payoff maximizing policy with cognitive performance and demographic measures. All analyses are identical to those in Table 5, modified only to weight observations according to the procedures described in Section 6.3.1. Standard errors are reported in parentheses, and are calculated by applying the delta-method to the clustered (by respondent) standard errors of the logit coefficient estimates.

# D Summary of MTurk Pilots

Prior to running our survey with the Understanding America Study, we conducted two initial studies on Amazon Mechanical Turk (MTurk). Both of these studies presented the school-choice version of the UAS survey. Survey language closely followed that in Section 4.2. The first of these studies was an initial proof-of-concept, used to confirm our suspicion that respondents would not appreciate the importance of processing order in a simple scenario. In this study we did not randomize seat numbers, but instead presented a single version of the question to assess the average rate of payoff-maximizing answers. Given our finding that the majority of respondents did not give the payoff-maximizing answer, in the second study we randomized seat numbers in order to apply the regression-discontinuity-based empirical strategy described in the main text.

## D.1 MTurk Study 1

### D.1.1 Design

The design of MTurk Study 1 closely mirrors the text of the school-choice scenario described in Section 4.2 with two important differences.

First, and most importantly, subjects answered only a single incentivized question. This question offered a choice between an RL policy with 40 seats reserved and an RF policy with 60 seats reserved. Recall that in our scenarios one should expect a 50-50 composition of reserve-qualifying and general-category students among the top 100 students. With near certainty, assigning seats purely based on priority would result in 60 or fewer reserve-category students being admitted. In these cases, the RF policy would result in 60 seats assigned to the reserve group.[1] In contrast, the RL policy assigns 70 seats to the reserve group in expectation: half of the 60 open seats, and all 40 of the reserve seats. In this scenario, the RL policy is payoff maximizing despite having 20 fewer seats reserved for the respondent's group.

Second, this study contained an additional unincentivized question eliciting perceptions

[1] In the $< 1\%$ of remaining cases, more than 60 reserve-category students are admitted, but the RF policy has no effect on the outcome relative to an assignment procedure with zero reserved seats.

of the importance of processing order. Recall that the set-up of the reserve system is communicated to subjects in an initial example presenting two policies: 30 seats reserved first or last. As in the UAS study, this question is followed by 4 comprehension check questions. Unlike the UAS study, after the comprehension check questions, half[2] of respondents are asked to indicate which policy is better for the target group. Three options were presented: the 30-seat RL policy, the 30-seat RF policy, or the option to say that both policies are the same.

The preregistration for this study is available here: https://aspredicted.org/5rn99.pdf.

#### D.1.2 Deployment

Our study was deployed on MTurk in May, 2019. We targeted a sample for analysis of 500 observations. Pursuing this target, we solicited 639 complete responses to our study, with 508 completing all comprehension questions correctly and being eligible for inclusion in our sample.[3] These 508 observations constitute our sample for analysis.

#### D.1.3 Summary of Results

Examining the incentivized choice between a 40-seat RL policy and a 60-seat RF policy, we found that only 34% of respondents chose the payoff-maximizing RL policy. Additionally, in the unincentivized question asking which processing order most benefits the target group, 42% of respondents correctly indicated the RL policy, 24% of respondents incorrectly indicated the RF policy, and 33% of respondents incorrectly stated that both processing orders have the same effect. Similar to our results in the main text, these results support the idea that many subjects fail to pursue payoff-maximizing choices regarding the design of a reserve

[2]While we were interested in subjects' responses to this question, we worried that asking this question could influence later responses to the incentivized scenario of primary interest. We randomized whether this question was presented in order to collect this data while allowing us to statistically test for this worrying possibility of contamination. We ultimately found no evidence that later answers varied by the presence of this question.

[3]In the UAS study, in accordance with our preregistration, we include subjects in the main analysis regardless of whether they completed their comprehension check correctly. In the MTurk studies, we followed a different (but also preregistered) strategy of excluding subjects who failed the comprehension checks. Excluding these subjects is a common practice on MTurk, meant to help screen for "unserious" respondents and for bots. This is not a concern in the UAS, which is what motivated our decision to no longer exclude these respondents (particularly given that such exclusions leads to a selection problem that undoes some of the benefits of the UAS's representative sampling).

system, and that a plurality of respondents believe that processing order does not matter (partially explaining the first result).

## D.2 MTurk Study 2

### D.2.1 Design

Unlike MTurk Study 1, which presented a single scenario, Study 2 presents 6 scenarios with seat numbers sampled in a similar manner as in the UAS study, with the same preregistered main analyses. While this study is nearly identical to that in the UAS, two differences are noteworthy.

First, recall that the number of seats for the RF policy in the UAS was was uniformly sampled from 13 potential values: -5, -3, -1, +1, +3, or +5 seats relative to both the optimal and naïve thresholds, as well as an additional point approximately between the two thresholds. This resulted in most data being sampled from the regions "near" the thresholds of interest, with only a single point sampled in between these two regions. In MTurk Study 2, the number of seats in the RF policy was sampled uniformly from all odd intergers between $T^n - 5$ and $T^* + 5$. This covers all values sampled in the UAS study, but with more possibilities sampled in the region that's not local to either threshold. Because our test critically relies on regression discontinuities at the thresholds, the new sampling structure used in the UAS was adopted to preserve power with a smaller sample size.

Second, we exclude data from one of the six scenarios due to a typo that appeared in its text.[4] Since we are interested in studying confusion that arises from intuitions about reserve policies, it is a confound if confusion could be explained by imprecise text.

The preregistration for this study is available here: https://aspredicted.org/tq7u8.pdf.

### D.2.2 Deployment

Our study was deployed on MTurk in May, 2019. We targeted a sample for analysis of 2,000 observations. Pursuing this target, we solicited 2,625 complete responses to our study, with

[4]In this question, at one point where the two stages of the reserve policy are explained, the number of seats processed in the first and second stage are permuted for one of the policies.

Table A8: Estimates of Choice Functions Governing Policy Preferences: MTurk Sample

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| $\beta^n$: $N_{ij}$ | 0.47 | | 0.40 | | 0.43 | 0.42 | 0.44 | 0.41 |
| | (0.02) | | (0.04) | | (0.03) | (0.04) | (0.02) | (0.03) |
| $\beta^*$: $O_{ij}$ | | 0.06 | | 0.06 | 0.05 | 0.04 | 0.02 | 0.04 |
| | | (0.01) | | (0.03) | (0.02) | (0.03) | (0.02) | (0.03) |
| Control for $s^{RF}$ (f) | Sample Restriction | | Local Poly | | Cubic Spline | | 5th-order Poly | |
| $s^{RL}$ Fixed Effects | No | | No | | Yes | | Yes | |
| $s^{RL}$ FEs × f | No | No | No | No | No | Yes | No | Yes |
| Respondents | 1782 | 1795 | 1013 | 1013 | 2054 | 2054 | 2054 | 2054 |
| N | 3368 | 3505 | 10270 | 10270 | 10270 | 10270 | 10270 | 10270 |
| $R^2$ | 0.225 | 0.007 | | | 0.213 | 0.215 | 0.213 | 0.213 |

Notes: This table reports regressions of an indicator for choosing RF policy on controls for the number of seats reserved. All analyses are identical to those in Table 2, but use the MTurk Study 2 sample instead of the UAS sample. Standard errors, clustered by respondent, are reported in parentheses.

2,054 completing all comprehension questions correctly and being eligible for inclusion in our sample. These 2,054 observations constitute our sample for analysis.

### D.2.3 Summary of Results

Appendix Table A8 reproduces the main analyses of Table 2 conducted in the MTurk data. Across all columns, the estimated rate of use of the naïve choice function is higher in the MTurk data, but differences never exceed 8 percentage points. These results similarly lead to the conclusion that a substantial fraction of subjects exhibit a nearly sophisticated understanding of optimal behavior, with errors driven solely by an incorrect belief that processing order is irrelevant. In contrast to the results in the UAS, these estimates suggest that a statistically significant proportion of respondents applied the optimal choice function. However, this difference is at least partly driven by the higher precision of estimates in the larger MTurk sample. The estimated rate of use of the optimal choice function is 6% in the preferred analysis of column 2—i.e., our finding that applying the optimal choice function is very rare continues to hold.