Pre-Analysis Plan:

Contact and the Price of Prejudice

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Abstract

We conduct a laboratory experiment at the University of Osaka to test whether brief cooperative contact with an outgroup member reduces the willingness to pay for same-ethnicity coworkers. The design combines the price-of-prejudice paradigm of Hedegaard and Tyran (2018) with a randomized contact round: Japanese subjects are paired with either a Japanese or an international student for a joint production task, and then make 30 incentivized binary choices between potential partners whose nationality and productivity are revealed. This document pre-registers the hypotheses, estimation strategy, and power analysis.

Keywords: contact hypothesis, discrimination, experiments.

JEL Classification: J15, C92

1 Introduction

Taste-based discrimination—preferring ingroup members despite monetary costs—is well documented in laboratory settings (Becker, 1957; Hedegaard and Tyran, 2018). Hedegaard and Tyran (2018) showed that 38% of decision makers chose a less productive same-ethnicity partner when names and productivities were revealed, forgoing on average 8% of earnings. Crucially, discrimination was *price-elastic*: a 10% increase in the cost of choosing the same-ethnicity partner reduced discrimination by approximately 9%.

Intergroup contact theory, originating with Allport (1954), predicts that positive contact under certain conditions between members of different groups reduces prejudice. Individual results and meta-analytic evidence generally supports this prediction but contact does not always work (Pettigrew and Tropp, 2006; Paluck, Green and Green, 2019; Clochard, 2026; Achard et al., 2025; Finseraas and Kotsadam, 2017; Finseraas et al., 2019; Clochard, Hollard and Sene, 2026; Scacco and Warren, 2018; Elwert, Keller and Kotsadam, 2023). No experiment has directly tested whether contact reduces the *price* individuals are willing to pay for discrimination.

We combine these two literatures in a single design. We replicate the price-of-prejudice paradigm of Hedegaard and Tyran (2018) and extend it with a randomized contact round in which subjects cooperatively work with an outgroup member before making their discrimination choices. Our primary research question is: Does cooperative intergroup contact reduce the willingness to pay for same-ethnicity coworkers?

2 Experiment and sample

Sample The sample will consist of approximately 200 individuals recruited through ORSEE (Greiner, 2015) at the University of Osaka. This sample will consist mostly of Japanese students. International

(foreign) students, used for the contact treatment (see below) will be recruited through the network of international students at the university.

The sample will be divided in sessions of 12 subjects, of which approximately 3 will be international students and 9 will be Japanese students (our main sample).

Experimental Design The experimental design resembles that of Hedegaard and Tyran (2018), with an intermediate period of contact. Subjects will perform a real effort task individually for 12 minutes, with a piece-rate reward system. The task will be to stuff envelopes. Individual productivity will be recorded.

After this initial productivity measure, subjects will be randomly paired. Because we ensure that approximately 25% of the subjects in each session (3 subjects for a session of 12 people) are foreign, by design approximately 6 Japanese students will be allocated to the control group (paired with another Japanese student) and 3 will be allocated to the treatment group (paired with an international student). Treatments are summarized in Figure 1.

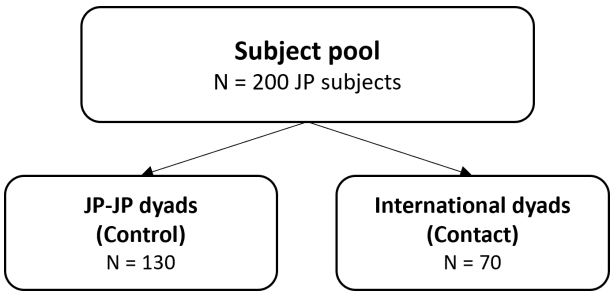


Figure 1: Treatment arms

The pairs will perform the same task as in the individual production for 12 minutes, except that pairs will be paid collectively, with a joint production function. Pairs will be encouraged to discuss during the contact phase.

Instead of being paid the sum of all earnings, subjects will be paid based on one of four randomly

selected payment types: individual production earnings, collective production earnings, dictator game earnings as dictator, or dictator game earnings as recipient. This random payment selection allows us to increase the piece-rate to make production more appealing without increasing the overall research budget.

After the intervention, all participants will answer a set of questions which will be used to measure their willingness to pay to discriminate (see below for a detailed description of outcomes).

Decision rules for dropping observations If treated participants do not complete the experiment, we will exclude their observation.

Decision rules for dropping variables If 90 percent or more of the sample answers the same value on a given variable, we will define this as limited variation, and therefore will drop variables in question from the analysis.

Missing values If more than 30 percent of the respondents do not answer a particular question, it will no longer be seen as a variable of interest. Missing values on control variables will be handled by recoding to zero and adding dummies for missing.

3 Data and coding of main variables

The data will come from the questionnaire in Appendix A, collected via oTree (Chen, Schonger and Wickens, 2016).

Treatment variables The treatment variable $Contact$ will be a dummy variable equal to 1 if the person the subject is paired with is an international student.

Primary outcome variables The main outcome variable will be resembling that of Hedegaard and Tyran (2018): participants will be invited to participate again in the experiment, and for this new round of experiment, they will be told that they can choose who they will be partnered with. They will make decisions of their preferred options out of pairs, as shown in the example in Figure 2. They will be given information about the individual's performance in the individual productivity task, as well as their name (signaling nationality, foreign names are displayed using a different alphabet in Japanese) and a time slot. This last dimension is used to make the outcome of the study less salient.

Figure 2: Example of choice

Note: This Figure displays a choice between two partners, Hana and Kazuma. Productivity in the initial productivity round and time slot are displayed.

Subjects will perform 30 binary choices. We will vary the contents of the choices. At the end of the experiment, we will select at random some participants to come back to the lab and randomly implement one of their choices. The pairs are displayed in Appendix B. Out of the 30 choices, 23 will involve a Japanese-Foreign pair and are used for the discrimination analysis. The remaining 7 choices are decoys: 4 Japanese-Japanese pairs and 3 Foreign-Foreign pairs, included to reduce the salience of the nationality dimension. The order of display of the questions will be randomized.

Choice variable. For each Japanese subject i and each of the 23 Japanese-Foreign choice situations j:

- F_{ij}: indicator equal to 1 if subject i chose the international (foreign) partner in situation j; 0 if

they chose the Japanese partner.

- $\Delta R_j = r_j^F - r_j^J$: productivity difference (foreign minus Japanese) in situation j. Positive values mean the foreign partner is more productive. The productivity differences span a grid from -20 to $+20$.

Discrimination indicators. We distinguish between the raw choice and discrimination *conditional on productivity*:

- *Anti-foreign discrimination*: $D_{ij}^F = \mathbf{1}[F_{ij} = 0 \text{ and } \Delta R_j > 0]$. Subject chose the Japanese partner *despite* the foreign partner being more productive.
- *Anti-Japanese discrimination*: $D_{ij}^J = \mathbf{1}[F_{ij} = 1 \text{ and } \Delta R_j < 0]$. Subject chose the foreign partner *despite* the Japanese partner being more productive.

Participant-level outcomes. For each subject i:

- *Anti-foreign discrimination share*: $\bar{D}_i^F = \sum_{j:\Delta R_j>0} D_{ij}^F / \sum_j \mathbf{1}[\Delta R_j > 0]$
- *Anti-Japanese discrimination share*: $\bar{D}_i^J = \sum_{j:\Delta R_j<0} D_{ij}^J / \sum_j \mathbf{1}[\Delta R_j < 0]$
- *Net discrimination share*: $\bar{D}_i^{\text{net}} = \bar{D}_i^F - \bar{D}_i^J$
- *Willingness to pay* (WTP$_i$): estimated from choice patterns via the logit model (see Section 4).

Secondary outcomes As secondary outcome, we will have the following measures. First, a dictator game, where the participant will play with the person they are paired with during the second production stage ($dictator_i$). Second, a measure of altruism by asking participants whether they would prefer to send money to a charity involving an international student organization ($charity_i$). Third, a measure of preference for discrimination, representing how much participants agree with the sentence: Immigration to Japan should be increased ($immigration_i$).

Controls During the course of the experiment, we will collect information about gender, age and education level. Other control variables are $r_i^{(1)}$: individual productivity in Round 1 (number of envelopes) and session fixed effects.

We will test for imbalance using these characteristics. If these variables are imbalanced, we will control for these in the estimations.

In addition, we will also control for the difference in productivity between the Japanese and foreign partners, ΔR_j, in specifications where that makes sense.

Heterogeneity As exploratory hypotheses, we will explore heterogeneity of treatment effects using the method from Chernozhukov et al. (2025). We will also explicitly test for heterogeneity with respect to prior contact with international students (from the post-experiment survey).

4 Empirical Strategy

We pre-specify three complementary estimators that use different amounts of the data, ordered from most to least efficient.

4.1 Estimator 1: Logit Demand Curve (Primary)

The primary estimators exploit the full 23-choice panel per subject (using only the Japanese-Foreign pairs; the 7 decoy pairs are excluded).[1] The probability that subject i chooses the foreign partner in situation j is modeled as:

$$\Pr(F_{ij} = 1) = \Lambda(\alpha + \beta\,\Delta R_j + \gamma\,\text{Contact}_i + \delta\,(\Delta R_j \times \text{Contact}_i)) \tag{1}$$

[1] The 4 Japanese-Japanese and 3 Foreign-Foreign decoy pairs are excluded from all primary and secondary analyses. They serve only to reduce the salience of the nationality dimension during the experiment.

where $\Lambda(\cdot)$ is the logistic CDF. The coefficients have the following interpretation:

- $\beta > 0$: subjects are more likely to choose the foreign partner when the productivity gap ΔR is larger (rational response to price).
- γ: shift in the intercept for the contact group (level effect on discrimination).
- δ: shift in price-sensitivity for the contact group (slope effect on demand curve).

Willingness to pay. Following the logit structure, WTP is the productivity difference at which a subject is indifferent between the two partners:

$$\text{WTP}_{\text{no contact}} = -\frac{\alpha}{\beta} \tag{2}$$

$$\text{WTP}_{\text{contact}} = -\frac{\alpha + \gamma}{\beta + \delta} \tag{3}$$

$$\Delta\text{WTP} = \text{WTP}_{\text{contact}} - \text{WTP}_{\text{no contact}} \tag{4}$$

A negative ΔWTP indicates that contact reduces the willingness to pay for a Japanese partner.

Inference. We test $H_0 : \gamma = \delta = 0$ (no contact effect on either the level or slope of the demand curve) using a Wald χ^2 test with standard errors clustered at the participant level. For ΔWTP, we report a 95% bootstrap confidence interval (1,000 bootstrap replications, stratified by treatment arm, resampling participants).

4.2 Estimator 2: Choice-Level Linear Probability Model

We estimate the same specification by OLS:

$$F_{ij} = \alpha + \beta\, \Delta R_j + \gamma\, \text{Contact}_i + \delta\, (\Delta R_j \times \text{Contact}_i) + \varepsilon_{ij} \tag{5}$$

with standard errors clustered at the participant level. We test $H_0 : \gamma = \delta = 0$ via a Wald χ^2 test with the cluster-robust variance-covariance matrix. The LPM uses all $N \times 23$ observations and is nearly as powerful as the logit (see Section 6). It does not recover WTP (the ratio $-\alpha/\beta$ has no structural interpretation under linearity), but provides a simple, transparent test of whether contact shifts the demand curve. It is our second primary specification.

4.3 Estimator 3: Discrimination Shares (Participant-Level)

We collapse the 23 choices per subject to the participant-level net discrimination share $\bar{D}_i^{\text{net}}$ and estimate:

$$\bar{D}_i^{\text{net}} = \mu + \gamma \, \text{Contact}_i + u_i \tag{6}$$

with HC1 heteroskedasticity-robust standard errors. We test $H_0 : \gamma = 0$ via a two-sided t-test. This is the simplest estimator: it answers directly whether contact reduces the share of discriminatory choices. We also report results for $\bar{D}_i^F$ (anti-foreign discrimination only) as a robustness check.

4.4 Relationship Between Estimators

The three estimators exploit decreasing amounts of information:

- The **logit** uses all $N \times 23$ choice-level observations and the nonlinear demand-curve structure. It is the most efficient and recovers WTP.
- The **LPM** uses the same $N \times 23$ observations but imposes linearity, sacrificing some efficiency at the tails of the price distribution.
- The **discrimination shares** approach collapses to N observations (one per subject), discarding information about *where* on the demand curve discrimination occurs. It is the least efficient but the

most transparent.

We pre-specify the logit (Estimator 1) as the primary estimator for WTP-based inference and the LPM (Estimator 2) as the primary estimator for the choice-level treatment effect. The discrimination shares (Estimator 3) serve as a transparent robustness check. All three are reported.

5 Hypotheses

H1 (Primary) Contact reduces discrimination: Japanese subjects in the contact arm have a lower probability of choosing the less productive Japanese partner (lower anti-foreign discrimination share) than subjects in the no-contact arm.

H2 (Primary) Contact reduces willingness to pay for same-ethnicity coworkers: WTP is lower in the contact arm than in the no-contact arm.

H3 (Secondary) Demand for discrimination is price-elastic: the probability of choosing the Japanese partner decreases as the productivity advantage of the foreign partner increases (replicating Hedegaard and Tyran 2018).

All tests are two-sided with $\alpha = 0.05$.

6 Power Calculation

We conduct power analyses using both analytical formulas and Monte Carlo simulations.[2]

[2]Power simulations used 20 price situations per subject. The final design uses 23 Japanese-Foreign pairs, which provides slightly more power; the reported MDEs are therefore conservative.

6.1 Calibration of Expected Effect Sizes

To assess whether the experiment is adequately powered, we calibrate the expected effect of contact on discrimination using the meta-analysis of Clochard (2026), which synthesizes 209 outcome measures from 61 experimental papers ($N > 30{,}000$).

The overall meta-analytic effect of contact on prejudice is $d = 0.292$ (SE $= 0.039$, $p < 0.001$). However, effect sizes vary substantially across study characteristics. The benchmarks most relevant to our design are:

Benchmark	Cohen's d	SE	N_{measures}
Overall meta-analytic average	0.292	0.039	209
Cooperative games (our contact type)	0.279	0.073	32
Experimental games	0.142	0.023	21
Single encounter	0.271	0.073	59
Pre-registered studies (bias-corrected)	0.152	0.034	100
East Asia / Oceania	0.518	0.153	12

The demand-curve estimators (logit and LPM), which exploit all 23 Japanese-Foreign choices per subject, have highest power. Monte Carlo simulations show they achieve MDEs of approximately 3.5–3.7 τ units, corresponding to a 35–37% reduction in baseline WTP of 10 units.

7 Primary Analysis

1. **Balance check.** Compare contact and no-contact arms on pre-treatment observables (Round 1 productivity, gender, age). Report a balance table.

2. **Logit demand curve** (equation 1). Estimate with participant-clustered SEs. Report:

- Coefficients $\hat{\gamma}$ and $\hat{\delta}$ and their clustered (at the individual level) SEs.
- Wald χ^2 test of $H_0 : \gamma = \delta = 0$.
- WTP estimates: $\widehat{\text{WTP}}_{\text{no contact}}$, $\widehat{\text{WTP}}_{\text{contact}}$, $\widehat{\Delta\text{WTP}}$ with bootstrap 95% CI.

3. **LPM** (equation 5). Estimate with participant-clustered SEs. Report the Wald χ^2 test of $H_0 : \gamma = \delta = 0$.

4. **Discrimination shares** (equation 6) as a robustness check. Estimate $\hat{\gamma}$ with HC1 robust SEs. Report the t-test for the contact effect on net discrimination shares and on anti-foreign discrimination shares separately.

5. **Demand curve plot.** Plot the share choosing the Japanese partner (y-axis) against ΔR (x-axis), separately for contact and no-contact arms, with 95% confidence bands.

8 Secondary and Exploratory Analyses

8.1 Gender Heterogeneity

We pre-specify a secondary analysis restricting the sample to men (expected to represent approximately 2/3 of participants). Estimation is the same as the primary analysis but on the male subsample. We also test for a gender $\times$ contact interaction in the full sample by adding Gender_i and $\text{Gender}_i \times \text{Contact}_i$ to the logit.

Machine learning heterogeneity. As an additional exploratory analysis, we explore heterogeneity of treatment effects using the generic machine learning method of Chernozhukov et al. (2025).

8.2 Survey-Based Mechanisms

A post-choice survey measures whether participants agree that immigration to Japan should be increased.

We test whether contact improves this measure (OLS on Contact_i) and conduct mediation analysis: does the contact effect on discrimination operate through these channels?

8.3 Charitable Giving

Subjects choose between charities; one option benefits international students (JASSO, the Japan Student Services Organization), the other benefits a charity that is unrelated and we anticipate to be unaffected by treatment, - The Nature Conservation Society of Japan. We test whether the contact arm is more likely to choose the outgroup-related charity (logit or LPM).

8.4 Dictator Game

Subjects receive a small bonus and choose how much to give to a recipient (randomly assigned: their Round 2 partner or international students in general). We test whether contact increases giving to the outgroup recipient.

8.5 Prior Contact as Moderator

We interact Contact_i with a prior-contact indicator (from survey: frequent vs. infrequent interaction with international students) to test whether the contact treatment effect is larger for subjects with less prior exposure.

9 IRB Approval and Consent

We will ask for informed consent at the beginning of the experiment.

The project received approval from the Institutional Review Board from the Institute of Social and Economic Research at the University of Osaka (#20260104) on 30 January 2026.

10 Archive

The pre-analysis plan is archived before any data is collected. We archived it at the registry for randomized controlled trials in economics held by the American Economic Association: https://www.socialscienceregistry.org/ on 13 March 2026.

References

Achard, Pascal, Sabina Albrecht, Riccardo Ghidoni, Elena Cettolin and Sigrid Suetens. 2025. "Local exposure to refugees changed attitudes to ethnic minorities in the Netherlands." *The Economic Journal* 135(667):808–837.

Allport, Gordon W. 1954. *The Nature of Prejudice*. Cambridge, MA: Addison-Wesley.

Becker, Gary S. 1957. *The Economics of Discrimination*. Chicago: University of Chicago Press.

Chen, Daniel L, Martin Schonger and Chris Wickens. 2016. "oTree—An open-source platform for laboratory, online, and field experiments." *Journal of Behavioral and Experimental Finance* 9:88–97.

Chernozhukov, Victor, Mert Demirer, Esther Duflo and Iván Fernández-Val. 2025. "Fisher–Schultz Lecture: Generic Machine Learning Inference on Heterogeneous Treatment Effects in Randomized Experiments, With an Application to Immunization in India." *Econometrica* 93(4):1121–1164.

Clochard, Gwen-Jiro. 2026. Reducing Prejudice: A Meta-Analysis and Experiment on the Contact Hypothesis. Technical report Working paper.

Clochard, Gwen-Jirō, Guillaume Hollard and Omar Sene. 2026. "Bringing contact interventions to the lab: Effects of brief bilateral discussions on interethnic trust in Senegal." *World Development* 199:107247.

Elwert, Felix, Tamás Keller and Andreas Kotsadam. 2023. "Rearranging the desk chairs: A large randomized field experiment on the effects of close contact on interethnic relations." *American Journal of Sociology* 128(6):1809–1840.

Finseraas, Henning and Andreas Kotsadam. 2017. "Does personal contact with ethnic minorities af-

fect anti-immigrant sentiments? Evidence from a field experiment." *European Journal of Political Research* 56(3):703–722.

Finseraas, Henning, Torbjørn Hanson, Åshild A Johnsen, Andreas Kotsadam and Gaute Torsvik. 2019. "Trust, ethnic diversity, and personal contact: A field experiment." *Journal of Public Economics* 173:72–84.

Greiner, Ben. 2015. "Subject pool recruitment procedures: organizing experiments with ORSEE." *Journal of the Economic Science Association* 1(1):114–125.

Hedegaard, Morten Størling and Jean-Robert Tyran. 2018. "The price of prejudice." *American Economic Journal: Applied Economics* 10(1):40–63.

Paluck, Elizabeth Levy, Seth A Green and Donald P Green. 2019. "The contact hypothesis re-evaluated." *Behavioural Public Policy* 3(2):129–158.

Pettigrew, Thomas F and Linda R Tropp. 2006. "A meta-analytic test of intergroup contact theory." *Journal of Personality and Social Psychology* 90(5):751–783.

Scacco, Alexandra and Shana S Warren. 2018. "Can social contact reduce prejudice and discrimination? Evidence from a field experiment in Nigeria." *American Political Science Review* 112(3):654–677.

Appendices

A Questionnaire

Questionnaire
Contact and Price of Prejudice

	Instructions to be read
	Instructions to be written on the screen
	Question
	Notes

1.1. Productivity task

Welcome to this experiment conducted by the University of Osaka.
As a thank-you for your participation, you will receive a fixed participation payment of **1,000 yen**. In addition, you may earn extra money based on your performance and decisions in the experiment.

During the experiment, you will complete **three tasks**. At the end, **one of these tasks will be randomly selected**, and the outcome of that task will determine your additional earnings.

The first task is as follows.
For a survey conducted by Osaka University, we need to send letters to non-profit organizations across Japan. Please carefully read and follow the instructions provided on your desk.

In this task, you will have **12 minutes** to prepare as many envelopes as possible.
At the end of the task, we will count how many envelopes you prepared. If this task is randomly selected for payment at the end of the experiment, **you will earn 20 yen for each envelope you prepared.**

大阪大学が実施する実験へようこそ。
ご参加への謝礼として、**1,000 円**をお渡しします。さらに、作業の結果に応じて追加の報酬を受け取ることができます。

本実験では、**3 つのタスク**を行っていただきます。実験の最後に、**その中から 1 つのタスクがランダムに選ばれ**、そのタスクの結果に基づいて追加報酬が決まります。どのタスクが選ばれたかは、実験の最後に発表されます。or どのタスクが選ばれたかは、実験の最後に発表されるので、すべてのタスクに真剣に取り組んでください。

1 つ目のタスクは次の通りです。

大阪大学が実施する調査の一環として、日本全国の非営利団体（NPO）に手紙を送付します。机の上にある指示をよく読み、内容に正確に従って作業を行ってください。

このタスクでは、**12 分間で**できるだけ多くの封筒に手紙を封入していただきます。
作業終了後、あなたが完成させた封筒の数を確認します。このタスクが実験終了時に支払い対象としてランダムに選ばれた場合、完成**した封筒 1 通につき 20 円をお支払いします**。

Subjects perform the task.

1.2. Contact treatment

Subjects are then moved to a different room, where they are paired with another subject.

The second task is as follows.
In this task, you will perform the same activity as before, but **you will work in pairs**. Your partner is the person seated at your table.

As in the previous task, you will have **12 minutes** to prepare as many envelopes as possible.

At the end of the task, we will count how many envelopes each of you prepared. If this task is randomly selected for payment at the end of the experiment, **both of you will earn 10 yen for each envelope prepared by either member of your pair**.

2 つ目のタスクは次の通りです。
このタスクでは、先ほどと同じ作業を行っていただきますが、2 人 1 組で作業していただきます。ペアの相手は、あなたと同じ机に座っている方です。

前のタスクと同様に、**12 分間で**できるだけ多くの封筒に手紙を封入してください。

作業終了後、それぞれが完成させた封筒の数を確認します。このタスクが実験終了時に支払い対象としてランダムに選ばれた場合、**ペアのどちらかが完成させた封筒 1 通につき、お二人それぞれが 10 円を受け取ります**。

Subjects perform the task.

While subjects perform the task, GJC counts the number of envelopes per participant.

Subjects are then moved to the final room, where there are computers.

1.3. Consent form

Consent to participate in the study
Data confidentiality
All your answers will be recorded anonymously. No one, not even the researchers, will have access to your personal information.

Participant Rights
Your participation is voluntary, and you are free to leave the experiment at any time without explanation and without affecting your medical, social, healthcare, educational, or legal rights. You have the right to omit or refuse to answer any questions that are asked of you. You have the right to request that all data you have provided up to this point be withdrawn/destroyed. You can make this request by sending an email to the principal investigator (Gwen-Jiro Clochard, gjclochard@iser.osaka-u.ac.jp).

Benefits and Risks
There are no known benefits or risks beyond everyday life for you in this experiment.

Fees and Payment
For your participation you will earn a base payment of JP¥ 1000. During the experiment, you might earn the possibility of a bonus payment, which will depend on your participation.

What will happen to the data collected about me?
The data will be used only for the purpose of this research project.

What will happen with the experiment results?
The results of this experiment will be used in a study conducted by Gwen-Jiro Clochard. All results of this experiment will be presented anonymously and no individual results will be published.

Whom should I contact for additional information?
If you have any questions about this experiment, please contact the principal investigator, Gwen-Jiro Clochard, gjclochard@iser.osaka-u.ac.jp.

Thank you for taking the time to read this participant information sheet.

By clicking the box below, I confirm that:
1. I have read and understood the information about participation in this study. I have had the opportunity to consider this information.

2. I understood that my participation is voluntary and that I am free to withdraw from the study at any time without giving a reason, and without affecting my medica, social, educational, or legal rights.
3. I understood that the data collected during the study may only be reviewed and analyzed by the investigator of the study, Gwen-Jiro Clochard, as well as potential assistants.
4. I agree to participate in the study.

☐ I agree

研究参加への同意書

データの機密性

あなたの回答はすべて匿名で記録されます。研究者を含め、個人を特定できる情報にアクセスする者はいません。

参加者の権利

本実験への参加は完全に任意です。理由を説明することなく、いつでも実験への参加を中止することができます。その場合でも、あなたの医療、社会的、教育的、または法的権利に不利益が生じることはありません。また、質問への回答を省略または拒否する権利があります。これまでに提供したデータの削除を求めることもできます。この要請は、主研究者（Gwen-Jiro Clochard、gjclochard@iser.osaka-u.ac.jp）までメールでご連絡ください。

利益とリスク

本実験への参加によって、日常生活を超える特別な利益やリスクが生じることは想定されていません。

実験への参加に対する基本報酬として、1,000 円をお支払いします。実験中の作業結果に応じて、追加の報酬を得る可能性があります。

収集されたデータの取り扱い

収集されたデータは、本プロジェクトの目的のためにのみ使用されます。

実験結果の利用

本実験で得られたデータは、Gwen-Jiro Clochard によって実施される研究に使用されます。結果はすべて匿名で提示され、個人が特定される形で公開されることはありません。

追加情報についてのお問い合わせ

本実験に関してご質問がある場合は、主研究者の Gwen-Jiro Clochard（gjclochard@iser.osaka-u.ac.jp）までお問い合わせください。

この参加者情報シートをお読みいただき、ありがとうございました。

以下のボックスをクリックすることで、次の内容に同意したものとみなされます。

1. 本研究への参加に関する情報を読み、内容を理解しました。この情報について検討する機会があったことを確認します。
2. 参加は任意であり、理由を説明することなく、いつでも研究への参加を中止できることを理解しました。また、それによって私の医療、社会的、教育的、または法的権利に不利益が生じないことを理解しました。
3. 研究中に収集されたデータは、主研究者である Gwen-Jiro Clochard および必要に応じて研究補助者によってのみ確認・分析されることを理解しました。
4. 本研究への参加に同意します。

☐ 同意します

1.4. Demographic survey

Thank you for filling the envelopes. Now please answer the following questions. The questionnaire should not take more than 15 minutes.

封筒の封入作業にご協力いただき、ありがとうございます。
それでは、以下の質問にお答えください。
このアンケートは、15 分以内で回答できる内容となっています。

- Gender
  - What is your gender identity?
  - 自身の性自認をお答えください。

- Age
  - What is your birth year?
  - あなたの生まれた年（西暦）をお答えください。
- Education level
  - What is the highest level of education you have completed?
  - あなたの最終学歴をお答えください。

中学校卒業 (Completed primary education)

高等学校中退 (Some secondary education)
高等学校卒業 (Completed secondary education)
専門学校・短期大学中退 (Some vocational school or two-year college)
専門学校・短期大学卒業 (Completed vocational school or two-year college)
高等専門学校中退 (Some college of technology)
高等専門学校卒業 (Completed college of technology)
大学中退 (University dropout)
大学卒業（学士）(Bachelor's degree)
大学院修士課程修了 (Master's degree)
大学院博士課程修了 (PhD or equivalent)
回答しない (Prefer not to say)

- Field of study
  - What is your field of study?
  - あなたの専攻分野をお答えください。

文学(Literature)
人文科学(Humanities)
外国語学(Foreign languages)
法律学(Law)
経済学(Economics)
理学(Science)
医学(Medicine)
歯学(Dentistry)
薬学(Pharmacy)
工学(Engineering)
その他(Other)

- Nationality
  - What is your nationality?
  - あなたの国籍（出身国）をお答えください。

List of countries

- Japanese language proficiency (if answered non-Japanese in previous question)
  - What is your Japanese fluency level?
  - 日本語の能力はどの程度ですか。

基礎レベル (JLPT: N5 / CEFR: A1) (Basic (JLPT: N5 / CEFR: A1))
初級 (JLPT: N4 / CEFR: A2) (Elementary (JLPT: N4 / CEFR: A2))
中級 (JLPT: N3 / CEFR: B1) (Intermediate (JLPT: N3 / CEFR: B1))
上級 (JLPT: N2 / CEFR: B2) (Advanced (JLPT: N2 / CEFR: B2))
流暢に話せる (JLPT: N1 / CEFR: C1/C2) (Fluent (JLPT: N1 / CEFR: C1/C2))

1.5. Discrimination measure

Follow-up Task Invitation
In the coming days, you may be invited again to the envelope-packing task you previously completed with a partner.

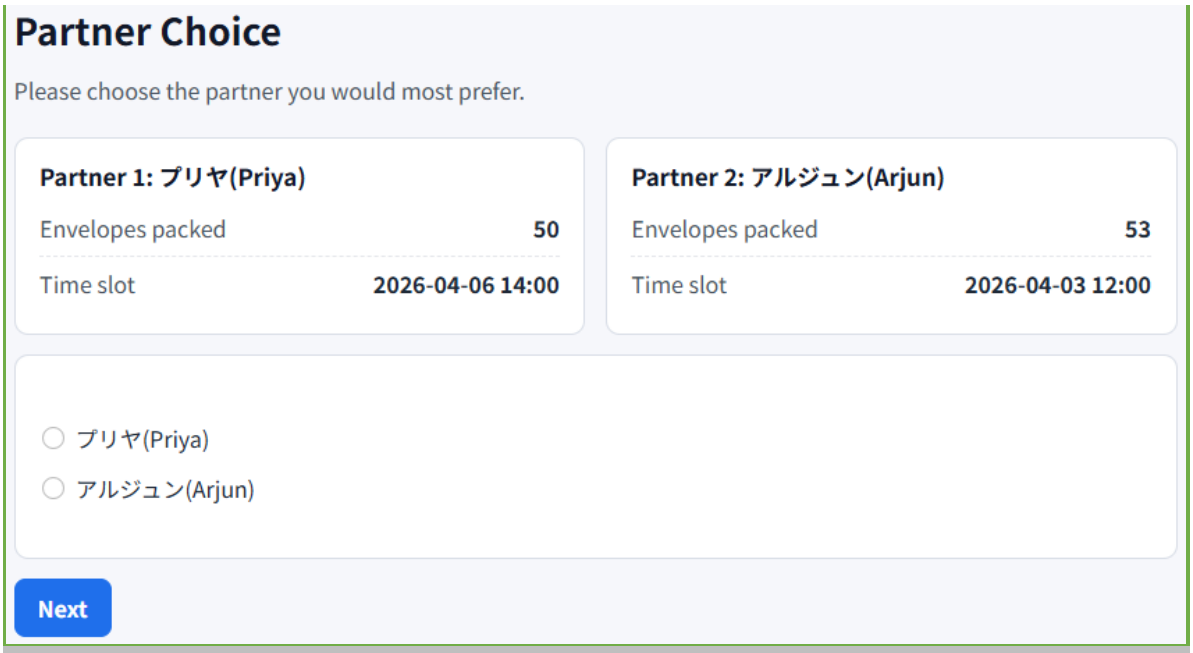
You will see several possible partner/date-time combinations and choose which one you prefer.
After the experiment, one of your choices may be randomly selected and used for follow-up invitation decisions.

再参加実験のご案内

今後数日以内に、先ほど行った作業（ペアで封筒に手紙を封入する作業）に再度ご参加いただく可能性があります。

いくつかのパートナー候補と時間帯が提示されますので、希望するパートナーと時間帯を選択してください。

実験終了後、あなたが選択した選択肢の うち 1つ がランダムに選ばれ、再度実験に参加するよう招待される場合があります。



Subjects make 30 decisions, 23 of which are choices between a Japanese and a foreign partner.

1.6. Open ended question

- Question to check for participant awareness
    - What do you think this experiment is about?
    - この実験は何を調べるものだと思いましたか

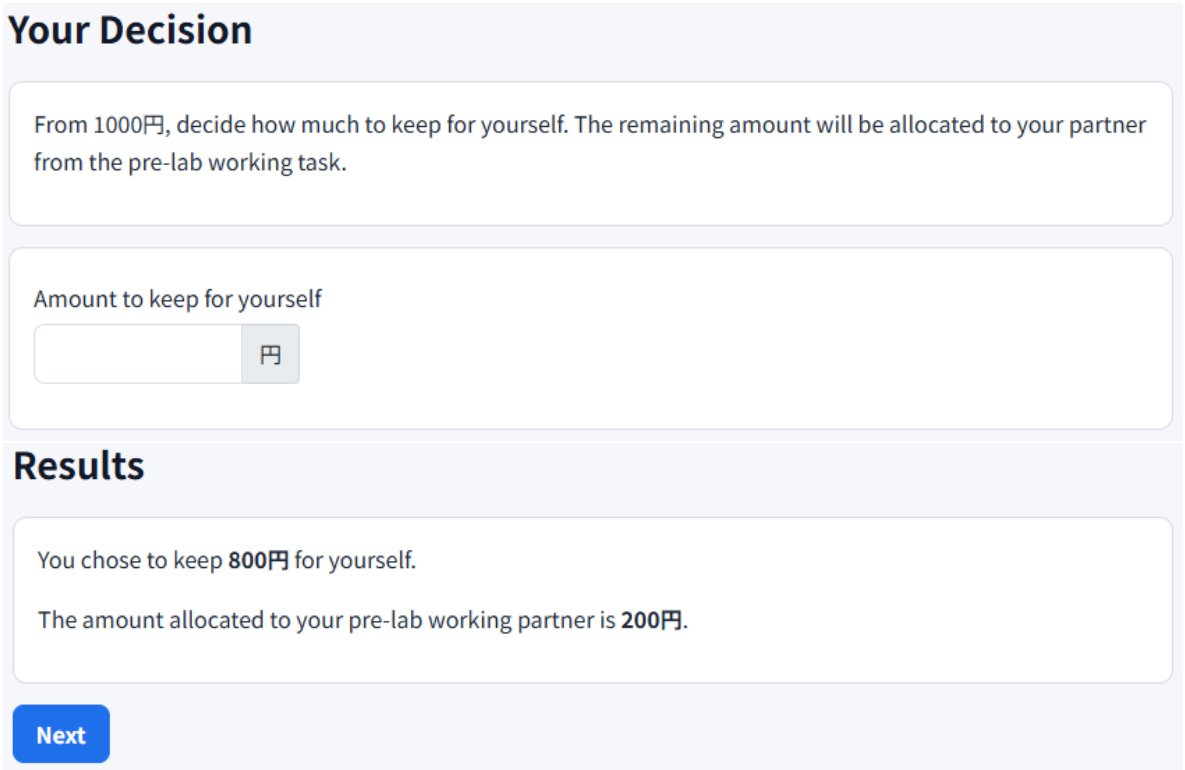
1.7. Dictator game (Allocation task)

This part is separate from the previous tasks.
Your previous choices and outcomes do not affect this part.

Rules
In this part, each participant makes an individual decision.

The total amount to allocate is 1000 円. You decide how much to keep for yourself and how much to allocate to your partner. If this task is selected for payout, either the amount you decided to keep for yourself or the amount your partner allocated to you will be randomly selected for payout.

The partner in this case refers to the experiment participant you worked together with previously, during the second task.



このパートでは、各参加者が個別に決定を行います。

合計 1,000 円 をあなたとパートナーの間で分配していただきます。 あなたは、この 1,000 円のうち、「自分が受け取る金額」と「パートナーが受け取る金額」を決定してください。実験終了時にこのタスクが支払い対象として選ばれた場合、ランダムに「自分が受け取る金額」か「パートナーが決定したあなたが受け取る金額」のどちらかをお支払いします。

ここでいうパートナーとは、先ほどの作業でペアになった参加者のことを指します。

1.8. Charity choice

We will now give you the opportunity to choose between two charities to which to donate 10,000 yen. At the end of the experiment, the choice of one participant will be implemented. You need to choose which of the following two NGOs you prefer to donate 10,000 yen to.

これから、10,000 円を寄付する先として、2 つの慈善団体のうちどちらかを選んでいただきます。実験終了時に、参加者のうち 1 名がランダムに選ばれ、その参加者の選択が実際に実行されます。以下の 2 つの NGO のうち、どちらに 10,000 円を寄付するかを選択してください。

- The Nature Conservation Society of Japan (Climate change) https://www.nacsj.or.jp/

In Japan, around 3,600 species are currently at risk of extinction. If these species disappear, ecological balance in Japan can be disrupted and affect our daily lives. This organization works to protect endangered species and preserve Japan's natural environment.

日本自然保護協会

現在、日本では約 3,600 種もの生き物が絶滅の危機にさらされています。これらの生き物が絶滅してしまうと、日本の生態系のバランスが崩れ、私たちの生活にも悪影響を及ぼし

ます。日本自然保護協会は、日本の豊かな暮らしを守るため、絶滅危惧種の保護活動に取り組んでいます。

- **Japan Student Services Organization (Support for international students in Japan)**
  https://www.studyinjapan.go.jp/en/about/outline.html

JASSO is an institution under the Ministry of Education, Culture, Sports, Science and Technology. It provides scholarships, support for international students, and student life support, aiming to foster creative human resources and promote international understanding and exchange.
独立行政法人日本学生支援機構

独立行政法人日本学生支援機構（JASSO）は、文部科学省が所管する団体です。奨学金事業や留学生支援事業、学生生活支援事業などを通じて、次世代の社会を担う人材を育成するとともに、国際理解・国際交流の推進にも取り組んでいます。

1.9. General survey

Next, we will ask a few questions about you and your opinions.
これから、あなたご自身やあなたの意見について、いくつか質問します。

To what extent do you trust people that you do not know? 知らない人をどの程度信頼しますか？

0	Do not trust at all 全く信頼しない
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	Trust completely: 完全に信頼する

Do you agree or disagree that the government in Japan should aim to reduce the economic differences between rich and poor? 日本政府は、富裕層と貧困層の経済的格差を減らすことを目指すべきだと思いますか？

1	Strongly disagree 強く反対
2	Disagree 反対

3 Neither agree nor disagree 賛成でも反対でもない

4 Agree 賛成

5 Strongly agree 強く賛成

Do you agree or disagree that immigration to Japan should be increased? 日本への移民を増やすべきだという意見に、あなたは賛成ですか、それとも反対ですか？

I like to compete against others. 私は他の人と競争することが好きである。

Being a housewife is just as fulfilling as working for pay. 専業主婦であることは、給与を得て働くことと同じくらい充実している。

Teams of similar personalities are more productive than teams with different personalities. 似たような性格の人で構成されたチームは、異なる性格の人で構成されたチームよりも生産的である。

Teams of the same ethnicity are more productive than teams with different ethnicities. 同じ民族の人で構成されたチームは、異なる民族の人で構成されたチームよりも生産的である。

On the whole, men make better political leaders than women do. 全体的に見て、男性は女性よりも優れた政治指導者である。

A university education is more important for a boy than for a girl. 大学教育は、女の子よりも男の子にとって重要である。

Here are two opinions of why people live in need in Japan are poor. Which comes closest to your view? 日本で困窮している人々が貧しい理由について、次の二つの意見があります。あなたの考えに最も近いのはどちらですか？

C1 People are poor because of laziness and lack of willpower. 人々が貧しいのは、怠けていることや努力が足りないことが原因である。

C2 People are poor because of an unfair society. 人々が貧しいのは、社会が不公平であるためである。

Which opinion about inequality comes closest to your view? 不平等について、次の二つの意見があります。あなたの考えに最も近いのはどちらですか？

C1 Large differences in people's incomes are acceptable to properly reward differences in talents and efforts. 人々の所得に大きな差があることは、才能や努力の違いに応じて適切に報われるためには必要である。

C2 For a society to be fair, differences in people's standard of living should be small. 社会が公平であるためには、人々の生活水準の差は小さいべきである。

How do you see yourself: Are you a person who is generally willing to take risks, or do you try to avoid taking risks? あなたは自分自身をどのようなタイプだと思いますか？一般的に、リスクを取ることに積極的な方ですか、それともリスクを避ける方ですか？

0	Not willing to take risk at all 全くリスクを取りたくない
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	Very willing to take risk 非常にリスクを取ることに積極的

How widespread do you think discrimination is in Japan? 日本では、差別はどの程度あると思いますか？

1	Not widespread at all ほとんど存在していない
2	Not very widespread あまり存在していない
3	Somewhat widespread ある程度存在している
4	Very widespread 非常に広く存在している

1.10. End of experiment

The survey is now complete.

Your payment will be determined based on the pre-assigned criterion below.

Participant ID: **SUB02**
Payment criterion: **Task 2 productivity (paired work)**

Please wait until you are called for payment.

アンケートはこれで終了です。

あなたの支払いは、事前に割り当てられた以下の指標に基づいて決定されます。

参加者ID：**SUB01**
支払い指標： **第1タスクでの生産性**

お支払いのために呼ばれるまでお待ちください。

While participants answer questions, GJC counts the number of envelopes per participant.

Proceed to payment

B Binary partner choices

Table B.1: List of choices

Choice id	Pair type	$Difference_{ij}$	Name 1	Origin 1	Gender 1	Prod 1	Date 1	Time 1	Name 2	Origin 2	Gender 2	Prod 2	Date 2	Time 2
q1	JP-For	-8	Shota	JP	male	43	2026-04-01	10:00	Fang	For	female	51	2026-04-03	13:00
q2	JP-For	6	Misaki	JP	female	40	2026-04-01	11:00	Karthik	For	male	34	2026-04-03	14:00
q3	JP-For	9	Yui	JP	female	37	2026-04-01	12:00	Mina	For	female	28	2026-04-04	10:00
q4	JP-For	-3	Aoi	JP	female	38	2026-04-01	13:00	Seonwoo	For	male	41	2026-04-04	11:00
q5	JP-For	4	Daiki	JP	male	42	2026-04-01	14:00	Min	For	female	38	2026-04-04	12:00
q6	JP-For	-10	Ayaka	JP	female	45	2026-04-02	10:00	Anya	For	female	55	2026-04-04	13:00
q7	JP-For	-4	Ren	JP	male	39	2026-04-02	11:00	Soyeon	For	female	43	2026-04-04	14:00
q8	JP-For	-7	Anna	JP	female	42	2026-04-02	12:00	Isha	For	female	49	2026-04-05	10:00
q9	JP-For	5	Haruto	JP	male	41	2026-04-02	13:00	Yating	For	female	36	2026-04-05	11:00
q10	JP-For	10	Sou	JP	male	36	2026-04-02	14:00	Jihoon	For	male	26	2026-04-05	12:00
q11	JP-For	-9	Moe	JP	female	44	2026-04-03	10:00	Vivek	For	male	53	2026-04-05	13:00
q12	JP-For	7	Nana	JP	female	39	2026-04-03	11:00	Haoran	For	male	32	2026-04-05	14:00
q13	For-JP	1	Kavita	For	female	37	2026-04-03	12:00	Nanami	JP	female	36	2026-04-06	10:00
q14	For-JP	2	Zihao	For	male	39	2026-04-03	13:00	Yuma	JP	male	37	2026-04-06	11:00
q15	For-JP	-8	Taehyun	For	male	30	2026-04-03	14:00	Saki	JP	female	38	2026-04-06	12:00
q16	For-JP	6	Minho	For	male	47	2026-04-04	10:00	Rina	JP	female	41	2026-04-06	13:00
q17	For-JP	-2	Zhiqiang	For	male	42	2026-04-04	11:00	Naoki	JP	male	44	2026-04-06	14:00
q18	For-JP	-3	Rohan	For	male	40	2026-04-04	12:00	Keisuke	JP	male	43	2026-04-01	10:00
q19	For-JP	20	Subin	For	female	60	2026-04-04	13:00	Kenta	JP	male	40	2026-04-01	11:00
q20	For-JP	-20	Mingxuan	For	male	15	2026-04-04	14:00	Manami	JP	female	35	2026-04-01	12:00
q21	For-JP	0	Neha	For	female	35	2026-04-05	10:00	Takumi	JP	male	35	2026-04-01	13:00
q22	For-JP	-1	Rahul	For	male	44	2026-04-05	11:00	Mayu	JP	female	45	2026-04-01	14:00
q23	For-JP	5	Yutong	For	female	45	2026-04-05	12:00	Kazuma	JP	male	40	2026-04-02	10:00
q24	JP-JP	10	Haruka	JP	female	49	2026-04-05	13:00	Yuta	JP	male	39	2026-04-02	11:00
q25	JP-JP	7	Shuhei	JP	male	52	2026-04-05	14:00	Yuna	JP	female	45	2026-04-02	12:00
q26	JP-JP	3	Rikuto	JP	male	47	2026-04-06	10:00	Risa	JP	female	44	2026-04-02	13:00
q27	JP-JP	0	Kazuki	JP	male	53	2026-04-06	11:00	Kana	JP	female	53	2026-04-02	14:00
q28	For-For	-3	Jimin	For	female	48	2026-04-06	12:00	Hyeonu	For	male	51	2026-04-03	10:00
q29	For-For	-7	Wei	For	male	54	2026-04-06	13:00	Jiaxin	For	female	61	2026-04-03	11:00
q30	For-For	-10	Yuna	For	female	50	2026-04-06	14:00	Vikram	For	male	60	2026-04-03	12:00

Note: The display order of these choices is randomized.