

Supplementary Material for “Spatial Segregation Directly Facilitates Social Categorization and Causes Intergroup Bias”

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S.1 Appendix for Study 1

S.1.1 Image Creation

The faces used in this study were from a sample of subjects from a standing subject pool at Harvard University. These subjects took part in an unrelated study and agreed to have their photo taken with the understanding that it would be used in further research. The photos were chosen at random from the available pool of self-identified men and women African Americans and whites. The photos were converted to black and white color scale and were cropped to 774×1089 px. Using Adobe Photoshop software, the background of each photo was removed and 16 photos were evenly spaced on a 533×750 px white background. This composite image was rescaled for display to 384×540 px. The morphed faces were created using FantaMorph software. Each subject was exposed to one set of 80 possible different sets of faces, 40 of which were all women and 40 of which were all men, with the racially ambiguous face consistent across the Integrated and Segregated conditions within each of the sets, but with a different face for each of the 80 sets. The placement of faces on the composite image was randomly generated for each set.

S.1.2 Detailed Results

Table S.1 is the detailed results from Study 1. There were five trials. For each trial, we display the mean response for the ambiguous faces in the Segregated White and Black conditions and the Integrated condition and the mean difference between the Segregated and Integrated conditions. We also display the T-statistic for a test that each mean difference is greater than 0, the P-value associated with a two-tailed test, and the N. The pooled result is generated using cluster-robust standard errors. Subjects were exposed to the Integrated condition twice, one of these is randomly designated as the White Integrated condition and differenced from the White Segregated condition and the other is designated as the Black Integrated condition and differenced from the Black Segregated condition.

Table S.2 are the covariates of subjects for Study 1, recruited from Amazon's Mechanical Turk (716, 66% of sample) and the Harvard Digital Lab for the Social Sciences (365 34% of sample)). Subjects on Mechanical Turk were paid \$.65 for their participation, which took an average of about 11 minutes to complete. Harvard Digital Lab for the Social Sciences subjects are general population volunteers.

Trial	Test	Integrated (SD)	Segregated (SD)	Difference (SE)	T value	CI	p	N
1	Black	3.6 (1.2)	3.71 (1.19)	-0.11 (0.06)	-1.78	[-0.23,0.01]	0.04	365
	White	3.67 (1.13)	3.58 (1.17)	0.09 (0.05)	1.74	[-0.01,0.2]	0.04	
2	Black	3.5 (1.12)	3.65 (0.95)	-0.18 (0.09)	-1.99	[-0.35,0]	0.02	148
	White	3.83 (1.08)	3.59 (0.96)	0.21 (0.08)	2.69	[0.06,0.37]	0.00	
3	Black	3.45 (1.22)	3.64 (1.19)	-0.2 (0.08)	-2.56	[-0.35,-0.05]	0.01	199
	White	3.67 (1.19)	3.61 (1.16)	0.07 (0.08)	0.85	[-0.09,0.22]	0.20	
4	Black	3.53 (1.17)	3.63 (1.15)	-0.11 (0.07)	-1.49	[-0.25,0.03]	0.07	196
	White	3.73 (1.16)	3.64 (1.11)	0.1 (0.08)	1.17	[-0.07,0.26]	0.12	
5	Black	3.56 (1.13)	3.61 (1.12)	-0.04 (0.06)	-0.67	[-0.17,0.08]	0.25	208
	White	3.75 (1.06)	3.64 (1.08)	0.11 (0.06)	1.72	[-0.02,0.24]	0.04	
Pooled	Black	3.54 (1.17)	3.66 (1.15)	-0.12 (0.02)	-4.95	[-0.17,-0.07]	0.00	1081
	White	3.72 (1.13)	3.61 (1.12)	0.1 (0.02)	6.66	[0.07,0.14]	0.00	

Table S.1: Detailed results of Study 1.

	Proportion
Male	0.53
Non White	0.19
Hispanic	0.07
US Resident	0.91
English Speaker	0.96
College Graduate	0.49
Conservative	0.32
Left Handed	0.12
Age	34.46
Income	35414

Table S.2: *Covariate Distribution in Study 1. All variables are 0/1 variables, except for Age (years) and Income (dollars).*

S.2 Appendix for Study 2

Assignment

In our final sample, we removed subjects from our sample who, despite our efforts to exclude them, participated in the experiment twice and we removed subjects who we identified, via name and address matching, to live in the same household as another potential subject. We removed one entire session and its paired session because of a pair of subjects who communicated disruptively in the waiting room. Our results are robust to the inclusion or exclusion of these subjects. If a session had fewer than five subjects arrive for participation, we canceled the session and its paired session and did not collect data.¹

Detailed Results

In Table we display the full results of Experiment 2.

Balance

Table S.4 displays the distribution of covariates across the Integrated and Segregated conditions in Study 2. An omnibus test of balance, correcting for the blocked assignment, demonstrates that randomization was successful ($\chi^2 = 8.17$ on 9 df, $p = 0.517$).

Subjects who responded to the web-based advertisement were excluded from participation if they failed to respond to survey questions, were not at least 18 years old, did not speak English at home, had friends who had participated in the study, were psychology majors in college, or did not live in Massachusetts. Subjects who met those criteria, and could be matched with another subject from a paired time, were then emailed and invited to participate. Subjects were compensated \$30 for their time, which was usually less than 1 hour. Subjects who participated in the Allocation task were randomly selected and the money they allocated was mailed to a random type-appropriate recipient from their session at a later date. Immediately following their participation, all subjects were debriefed about the nature of the deception.

¹ See Imai et al. (2009) on pair-matching and the resulting unbiasedness of estimators when paired units are dropped.

	Integrated (SD)	Segregated (SD)	Beta (SE)	CI	P	D	N
Allocation	-0.17 (0.86)	0.16 (0.77)	0.4 (0.17)	[0.07,0.71]	0.000	0.410	101
Attribution	0.39 (0.39)	0.38 (0.38)	0.03 (0.09)	[-0.15,0.2]	0.390	-0.010	284
Social Perceptions	-0.07 (0.57)	0.07 (0.68)	0.13 (0.08)	[-0.03,0.28]	0.050	0.230	283
Physical Perceptions	-0.12 (0.57)	0.11 (0.57)	0.22 (0.09)	[0.04,0.4]	0.010	0.390	174

Table S.3: Detailed results of Study 2.

	Integrated	Segregated	Std Diff	Z-score
Male	0.59	0.53	-0.094	-0.780
Non White	0.39	0.31	-0.180	-1.486
Hispanic	0.05	0.06	0.010	0.087
College Graduate	0.62	0.63	0.012	0.106
Conservative	0.09	0.07	-0.058	-0.492
Age	37.42	34.61	-0.175	-1.472
Income	30486	28142	-0.061	-0.514
Weight	167.96	169.97	0.028	0.245
Height	68.33	67.70	-0.083	-0.687
N	145	140		

Table S.4: *Covariate Balance Across Treatment Conditions Study 2. All variables are 0/1 variables, except for Age (years), Income (dollars), Weight (pounds), and Height (inches).*

	Integrated	Segregated	Beta	P	D	N
Allocation	-0.320	0.370	0.690	0.010	0.600	44
Attribution	0.320	0.400	0.060	0.320	-0.120	129
Social Perceptions	-0.070	0.150	0.150	0.100	-0.330	129
Physical Perceptions	-0.110	0.260	0.510	0.000	-0.640	77

Table S.5: Results of Study 2, using only subjects sitting equidistant from Ingroup and Outgroup members.

	Integrated	Segregated	Beta	P	D	N
Allocation	-0.300	0.400	0.670	0.020	-0.620	43
Attribution	0.270	0.400	0.180	0.080	0.170	155
Social Perceptions	-0.070	0.090	0.160	0.080	0.250	155
Physical Perceptions	-0.070	0.110	0.190	0.090	0.330	86

Table S.6: Results of Study 2, men only.

S.3 Study 2: Pre-Analysis Plan and Additional Results

We pre-registered our design and pre-analysis plan for Study 2 with *egap* on March 11, 2015 (#20150311AA) after conducting a pilot experiment in December 2014 and prior to any data collection. In conducting the experiment and analyzing the data we made the following decisions, which were not described in our pre-analysis plan:

1. We had intended to recruit 660 subjects, but given unanticipated challenges in attracting subjects, our final sample includes 285. We made the decision to stop when we had exhausted our funding.
2. We excluded subjects as described in Section S.2.
3. We trimmed the 5% outer percentile of responses to all open-ended questions, which eliminated clearly nonsensical answers, including average weights of 0 and average heights of over 9 feet.

In our pre-registration, we proposed sub-setting the data by five variables: 1) average spatial proximity to the ingroup and outgroup, 2) identification with the arbitrary group, 3) size of experimental session, 4) gender, 5) and political party. During the course of conducting the experiment, we decided it would be worthwhile to also to also subset by 6) subjects who did not express skepticism about the veracity of the arbitrary groups assignment. We did not sub-set by political party because we simply did not have enough Republicans or ideological conservatives in our experimental sample.

We subset the data into seven subsets: subjects sitting equidistant from Ingroup and Outgroup members (Table S.5), only men (Table S.6), large sessions (Table S.7), strong ingroup identifiers (Tables S.8–S.10, and non-skeptical subjects (Table S.11). The subsets reported here are broadly consistent with the responses from the entire sample.

We also examined responses to a question about the purpose of the experiment and coded responses that expressed skepticism on the arbitrary group deception. Two blind coders agreed on 95% of the responses. Sixteen percent of subjects were coded as skeptical, when either coder coded

	Integrated	Segregated	Beta	P	D	N
Allocation	-0.170	0.190	0.340	0.170	0.390	34
Attribution	0.390	0.360	0.030	0.400	-0.060	103
Social Perceptions	0.010	0.100	0.080	0.270	0.120	102
Physical Perceptions	-0.120	0.140	0.320	0.010	0.480	68

Table S.7: Results of Study 2, large sessions only. This table includes results only for subjects in an experimental session with more than 8 subjects, the median number of subjects per session.

	Integrated	Segregated	Beta	P	D	N
Allocation	-0.080	0.130	0.190	0.230	0.300	47
Attribution	0.500	0.440	0.010	0.480	-0.070	156
Social Perceptions	-0.040	0.190	0.300	0.010	0.360	155
Physical Perceptions	-0.140	0.200	0.330	0.010	0.660	84

Table S.8: Results of Study 2, strong identity subjects only. Strong identity is defined as having a value greater than or equal to the median value on a scale combining responses to questions about whether subjects would like to “get to know” members of the ingroup, feel like they “belong to” the ingroup, would like to be grouped with the ingroup for a long period of time, and feel like they are in competition with the ingroup (reverse coded).

	Integrated	Segregated	Beta	P	D	N
Allocation	-0.310	0.210	0.520	0.040	-0.490	54
Attribution	0.480	0.440	-0.020	0.550	0.050	151
Social Perceptions	-0.040	0.250	0.270	0.010	-0.410	150
Physical Perceptions	-0.100	0.170	0.350	0.010	-0.430	93

Table S.9: Results of Study 2, strong identity subjects only. Strong identity is defined as having a value greater than or equal to the median value in response to a question about whether the groups are similar to each other.

	Integrated	Segregated	Beta	P	D	N
Allocation	-0.220	0.410	0.870	0.000	0.550	40
Attribution	0.120	0.270	0.180	0.030	0.280	146
Social Perceptions	-0.160	-0.010	0.160	0.060	0.280	146
Physical Perceptions	-0.040	0.150	0.140	0.130	0.320	86

Table S.10: Results of Study 2, strong identity subjects only. Strong identity is defined as having a value greater than or equal to the median value on a scale combining responses to questions about whether it would be useful to know group membership when “choosing a friend,” “deciding whether to date someone,” and “deciding where to live.”

	Integrated	Segregated	Beta	P	D	N
Allocation	-0.050	0.200	0.250	0.060	0.350	79
Attribution	0.440	0.460	0.070	0.270	0.020	235
Social Perceptions	-0.090	0.090	0.160	0.040	0.270	234
Physical Perceptions	-0.100	0.130	0.250	0.010	0.390	141

Table S.11: *Results of Study 2, non-skeptical subjects only.*

	Beta (SE)	CI	P	D	N
Allocation	0.4 (0.173)	[0.068,0.723]	0.00	0.41	101
Attribution	0.028 (0.091)	[-0.148,0.207]	0.38	-0.01	284
Social Perceptions	0.126 (0.077)	[-0.026,0.279]	0.05	0.23	283
Physical Perceptions	-0.044 (0.083)	[-0.201,0.12]	0.69	-0.08	283

Table S.12: *Results of Study 2, no trimming of open-ended questions.*

the subject as such. We display these results in Table S.11. Limiting the analysis to non-skeptical subjects does not significantly change the results.

Table S.12 displays the results of the Experiment 2 with no trimming of the open-ended responses. This only affects the sample used in the physical perceptions task.

S.4 Study 2: Detailed Procedure

S.4.1 Recruitment

We attempted to recruit from the general population of the Boston Area. We tried three methods, Facebook advertising, recruiting on Craigslist for the Boston area, and posted paper flyers at various locations in and around Cambridge, MA. Of these methods, only Craigslist proved efficient, reliable, and relatively consistent (see Table S.13 for detailed summary statistics).

RACE	White	Black	Asian	AIAN	Other
% (count)	64.6 (184)	17.9 (51)	10.2 (29)	0.0 (0)	7.0 (20)
EDUCATION	No Diploma	HS Diploma	Some College	Undergrad Degree	Grad Degree
% (count)	0.4 (1)	11.6 (33)	25.6 (73)	41.4 (118)	20.7 (59)
INCOME	Less than \$10K	\$10K-50K	\$50K-100K	\$100K-150K	More than \$150K
% (count)	26.7 (76)	55.8 (159)	15.1 (43)	1.8 (4)	0.4 (1)
PARTY ID	Strong Dem	Democrat	Independent	Republican	Strong Rep
% (count)	22.8 (65)	22.1 (63)	49.5 (141)	4.2 (12)	1.1 (3)
IDEOLOGY	Very Lib	Liberal	Neither	Conservative	Very Con
% (count)	16.8 (48)	43.9 (125)	30.9 (88)	8.1 (23)	0.0 (0)

Table S.13: *Study 2 Summary Statistics. N = 285, missing data omitted.*

In all versions of our recruitment materials, we told participants that “Participants will earn \$30 for 1 hour of their time. Some participants will earn up to \$10 more” (this last part was possible if they were in the subset of participants randomized into the Allocation task). The materials informed potential subjects that the study would take place somewhere in Harvard Yard. They were then told that “Participants will look at pictures and words and will answer surveys. Must be able to climb one flight of stairs.” Finally, they were instructed to go to WWW.HARVARDSTUDY.COM if they wanted to participate.

WWW.HARVARDSTUDY.COM led participants to a Qualtrics survey designed to collect basic information about participants and to make sure they met our criteria for participation. Additionally, we collected the following pre-treatment variables:

- What is your first name?
- What is your last name?
- What is your phone number?
- What is your email address?
- What is your home address?
- Are you 18 years of age or older?
- What is the year of your birth?
- Are you male or female?
- Which of these best describes you? (race)
- Do you consider yourself Hispanic/Latino?
- What language do you speak at home?
- What is the highest degree you have earned?

- What was your undergraduate major or intended field of study?
- What is your approximate annual income?
- Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or what? (no option for other)
- When it comes to politics, do you consider your liberal or conservative?
- What is your weight (in pounds)?
- What is your height (in feet and inches)?
- Have you taken part in a psychology study before?
- How many studies have you participated in?
- Please describe the nature of the study/studies you have participated in:
- Do you know anyone who has previously participated in this study?
- Please tell us how you heard about this study.

We then excluded participants based on the criteria described in the appendix. Once we selected who we would invite to participate, we sent an initial invite email to these participants. The initial invite email read as follows:

Hello,

We are contacting you in response to your interest in our social study at Harvard University. We are happy to inform you that you have been selected to participate in our research study, which will occur this **[day of week]**, **[month]** **[day of month]** at **[time of day]**. Your participation is expected to last approximately 1 hour. You will be compensated \$30 upon completion of the study. If the number of spots for the study fills up you will be compensated \$10 for your time and you will not need to stay for the hour. The study will be held at Sever Hall in Harvard Yard. A campus map can be found at the following web address: map.harvard.edu. Please arrive promptly at **[time of day]**. If you are late, you will not be able to participate. When you arrive please find **room 103** on the first floor and have a seat on one of the benches in the hallway, and a researcher will sign you in shortly.

Harvard Yard is accessible by both the Red Line and by bus, and there is street parking nearby in the residential area just northeast of the yard if you have a Cambridge parking pass.

Please respond to this email with a confirmation of your participation.

You must provide photo ID to participate. Please note that the building has one flight of stairs that you will have to use. Do not bring anybody with you to study, they will not be allowed to participate.

We thank you wholeheartedly for your interest in this study and look forward to seeing you on **[day of week]**.

Harvard Research Team

Regardless of whether potential participants confirmed that they were interested in participating, we sent up to two more follow up emails. We sent a reminder email the day before the experiment, and then one the day of. The text of the day-before reminder read as follows:

Hello,

This is just a reminder that you are invited to participate in a research study **tomorrow, [day of week]** **[month]** **[day of month]** at **[time of day]** in **Sever Hall**, in Harvard Yard. If you have previously indicated that you will be unable to attend but found that you are available after all, you are still welcome to participate.

We can't thank you enough for your participation and we look forward to seeing you tomorrow,

Harvard Research Team

The text of the day-of reminder read as follows:

Hello,

This is a final reminder that you are invited to participate in a research study **today at [time of day] in Sever Hall**, in Harvard Yard. If you have previously indicated that you will be unable to attend but found that you are available after all, you are still welcome to participate.

We can't thank you enough for your participation and we look forward to seeing you tomorrow,

Harvard Research Team

S.4.2 Research Assistants

In order to keep the study double-blind, we hired two research assistants to run the actual experiment. The research assistants (RAs) were provided a script and instructions on how to follow the procedures outlined in the script, and were instructed to ask participants to hold any questions until after the study and to tell the participants to stay quiet and to turn off their cell phones. Research assistants were aware that the “Perceptual Types” we sorted subjects into were arbitrary, but they were not told that our primary causal variable of interest was the level of segregation participants were exposed to. Each RA was assigned a specific set of duties as is outlined in the script included in this Supplementary Information. In total we had 7 research assistants, six of which were Harvard undergraduates and one of which was an incoming PhD student. Six RA's were female and 1 was male and 1 was non-white.

S.4.3 Session Procedure

Sessions were capped at 20 subjects per session, with a minimum of 5 subjects. The upper limit was based on room size and the minimum was to assure that there were enough participants to form 2 groups. We conducted a total of 40 sessions on weekends from March 11, 2015 to August 8, 2015.

For any given day we ran experimental sessions, we conducted at least 2 sessions. When potential participants signed up on the Qualtrics survey, they signed up for blocks of times that covered two sessions. So for example, they would be asked if they could participate between 10:30 AM and 1:00 PM. Each of those blocks of time encompassed two sessions, and when a potential participant selected, for example, between 10:30 AM and 1:00 PM, we would randomly assign them to either the 10:30 AM session or the 12:00 PM session, using the criteria described in the Appendix (each session ran for 1 hour and there was a half hour break, in this case from 11:30 AM to 12:00 PM, between sessions).

We randomly assigned seat locations to a set of arbitrary ID numbers that we would distribute to participants as they arrived. We then randomized the order of the ID numbers on the sign-in sheet. When each participant showed up, they would sign in to a printed spreadsheet that had a corresponding ID number, thereby randomly assigning a seat to participants as they arrived. These ID numbers determined which arbitrary group the participants were assigned to, where they sat in the lecture hall setting, their waiting room seat, which room they were assigned to to answer survey questions, and whether or not they would be participating in the Allocation Task.

Upon arrival, subjects sat in the hallway outside the lecture hall when they showed up for the study. Some subjects showed up very early and were made to wait and were not allowed to participate in a session for which they were not invited. Participants were checked in at close to the exact time to which they were invited. Two research assistants facilitated the check in process.

Upon being checked in, subjects were given a consent form, a pencil, an ID badge (with their ID number), and a scantron and directed to their seat in the lecture hall. The RAs continued to accept participants until approximately 10 minutes after the specific session time. Those who were already signed-in and seated were asked to remain quiet and to wait for the study to begin. This message was also displayed on the slideshow being projected as they entered the room. Once ten minutes were past, the RAs shut the door and disallowed anyone else from participating in the session.

Approximately 10 minutes after each session was scheduled to begin, the RAs began to read from the script (see Section [S.4.6](#)).

To assign to putative perceptual types, which formed the arbitrary groups, the RAs explained that the participants would be looking at images on a projected slideshow with a list of adjectives, and would select the adjective that best described the image and mark it on their scantron. Subjects were shown an example of both how to fill in a scantron and an example of what the pictures and adjectives looked like. They were then given approximately 30 seconds to look at each image and to decide what adjective went with each image. There were ten total images seen included in this Supporting Information attachment.

Once this process was complete, an RA collected their scantrons and told participants that they would take the scantrons to the computer lab to get a “sense of what perceptual type you are.” In fact, the RA simply took the scantrons and consent forms up to the waiting room and stored them under a desk. Once in the waiting room, the RA who brought the forms and scantrons also removed the ID numbers from the folders that were not assigned to participants, but left the folders in their positions. The color of the folder indicated what type a person would be who was assigned a folder (orange for “Type H” and purple for “Type Y”). Once the ID number labels were removed from the folders, the RA would head back to the lecture hall (see Figure [S.1](#)).

After the scantrons were collected and while the RA was in the “computer lab,” participants were given a distraction task consisting of a word search. The RA that remained in the lecture hall distributed wordsearches to the participants while they presumably waited for the results of their scantrons. The wordsearches had no legend (see Figure [S.2](#)).

Approximately 6 minutes after the RA left to go to the waiting room, they returned and informed participants that they would be moving on to the next part of the study. They were instructed to bring their belongings and to move so that the next session could make use of the lecture hall.

Subjects were guided to the waiting room by an RA and instructed to sit at the folder whose number corresponded to the ID badge they wore. They were also informed that the color of the folder they were assigned indicated their Perceptual Type. They are told that they will be directed to a new room in a few minutes to fill out some survey information, and they were asked to sit and wait quietly for a few minutes. Approximately 5 minutes after participants were seated, the other RA came in and informed them that their rooms were ready. This 5 minute period of waiting, in



Figure S.1: *Waiting Room Setup*

either integrated or segregated seating was the treatment (see Figure S.4.3) .

Once the waiting period was finished, subjects were given a map of the building, with rooms colored and labeled by perceptual type and ID number. In the integrated condition subjects rooms were randomly assigned throughout the two floors of the building. In the segregated condition, each group was segregated to one of the two floors in the building (See Figures S.4.3 and S.4.3).

Participants were told that the RAs would be waiting in the hallway if they had any questions, and they were instructed on how to begin the survey. The survey was also administered on Qualtrics and was pre-loaded on the laptop in their individual room. After the last question, the survey instructed them to open their colored folder and to follow the instructions sheet inside. Inside the folder was the \$30 payment verification form and the instructions page.

For one third of participants, their survey also instructed them to play the Allocation Task. In their folder, they had an additional \$10 payment verification form, as well as 4 envelopes. The envelopes were marked “You,” “Money,” “Type H,” and “Type Y.” In the envelope marked “Money” there were 10 one dollar bills. This task, if assigned, came at the beginning of the survey.

Once participants were finished with their survey the instructions sheet informed them that they were to sign their payment verification form(s) and to bring them to the RA in the hallway, where they would receive their payment and their debriefing form (see Figure S.6). RAs were waiting in the hallway with these materials, and trade participants the money and debriefing form for their payment verification form and study materials. This concluded the experiment.



Figure S.2: *Wordsearch*

S.4.4 Data Entry, Follow-Up, and Coding

Once sessions were completed, the results from the Allocation Task were entered by hand into a spreadsheet by a primary researcher. They then randomly allocated those payments to members of the intended group and sent them in the mail with an explanation which read as follows:

Hello,

If you are receiving this letter it means that you recently participated in a study at Harvard University. Some participants in this study were given the opportunity to allocate funds to people of different “perceptual types.” Therefore, if someone allocated money to a type H person, we randomly picked a type-H person from their session and gave them that money. The same is true for people who allocated money to a type-Y person. You happened to be one of the people randomly selected to receive this allocation.

We hope you found our study interesting and we appreciate your participation,

Harvard Research Team

The last question asked of participants was “In your own words, what do you think was the purpose of this study?” RAs coded these answers before they were informed of the true nature of

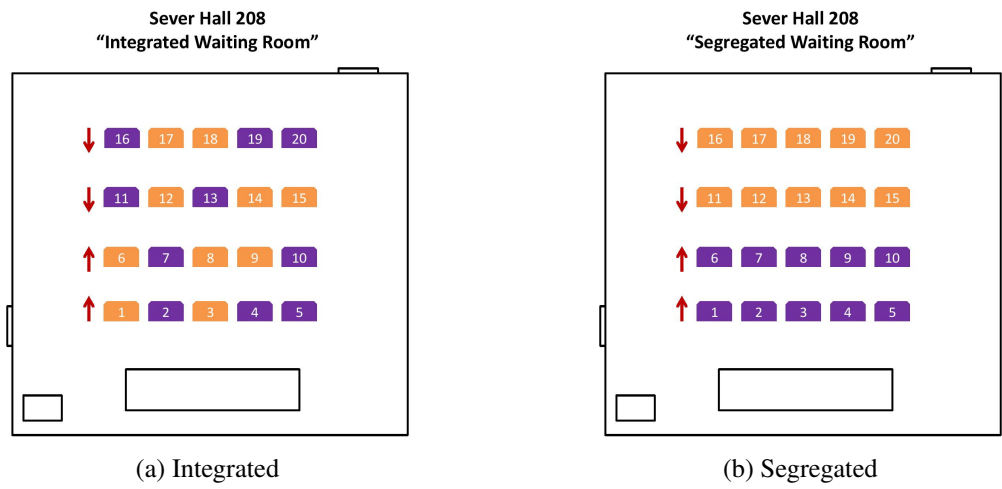


Figure S.3: *Waiting Room Diagrams*

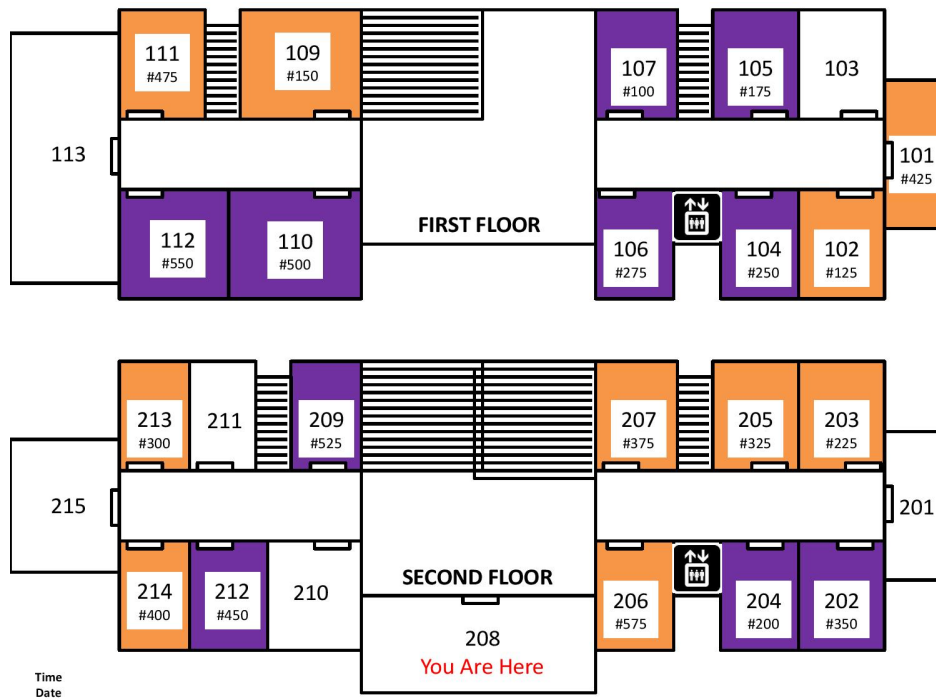


Figure S.4: *Integrated Map*

this study. They were given a codebook (see Section S.4.6) to assess these responses. We wanted to know if participants thought the study was about perception (this is what we were trying to convince them of), whether it was about grouping (also part of our deception), about discrimination (this is closer to what we were actually interested in), segregation (our actual independent variable),

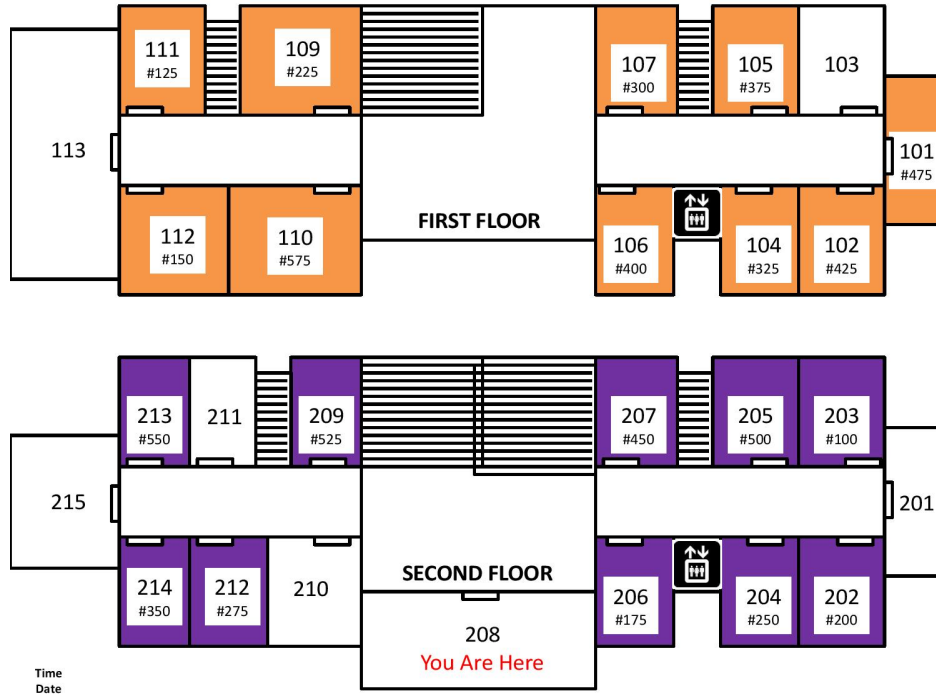


Figure S.5: Segregated Map

and whether participants doubted the validity of our groups in general.

S.4.5 Materials

Waiting Room

The waiting room was set up with 20 desk-seats arranged in four rows of five seats each, with two rows facing each other. Each desk was spaced two feet from desks on either side. On these desks were 20 colored folders (10 Type-H, 10 Type-Y) with pre-randomized ID numbers, arranged based on the treatment assignment of Integrated or Segregated.

Lecture Hall Materials:

- 2 research assistants
- 1 video projector and screen
- 1 sign-in table
- 1 laptop prepared to run the arbitrary groups assignment slides
- 2 copies of the script
- 20 consent forms
- 20 pencils
- 20 blank scantrons
- 20 word searches
- 20 ID tags

- 2 clipboards
- 1 sign-in sheet (ID number, lecture hall seat number, blank space for name)
- 1 verification sheet (Names of all invited participants, blank space for ID number)
- 4 extra printed survey instruments in case we had computer trouble
- 10 show-up forms to be filled out if participants showed up but were not allowed to participate
- 10 \$10 to pay participants who showed up but could not participate
- 1 roll of masking tape
- 1 sign instructing people not to enter

Waiting Room Materials

- 20 seats in a square formation (4 rows of 5 seats, see Section 1.4)
- 20 debriefing forms
- 10 orange folders
- 10 purple folders
- 20 instruction sheets
- 20 \$30 payment forms
- 20 \$20 bills
- 20 \$10 bills
- 7 \$10 payment forms
- 7 sets of 4 envelopes with preassigned ID numbers (Envelopes are labeled “Money,” “You,” “Type H,” and “Type Y”)
- 70 \$1 bills
- 20 building maps
- 1 clipboard
- 1 master sheet which has the following information: ID number, lecture hall number, Type, folder color, waiting room number, survey room number, dictator game status
- 1 sign instructing people not to enter

Survey Room Materials (x20)

- 20 laptop computers with survey instrument pre-loaded on the screen.
- 20 pens
- 20 signs instructing people not to enter

Staging Area Room Materials

- One primary researcher to deal with any problems and to help set up between sessions.

Assessment Effects of Perceptual Types Debriefing Form

Thank you all for participating in our experiment. A good portion of experimental research requires that some information be withheld from participants so that the participants do not try to answer research questions in a way they think the researcher would want them to. For example, if researchers wanted to know whether subjects prefer incandescent to halogen lighting, they wouldn't draw attention to the lighting itself, but may ask questions about the general atmosphere, holding everything constant except the lighting. Telling subjects what an experiment is about often makes the experiment vulnerable to bias by both the participants *and* the researchers.

One way to mislead participants is to use something called a "manipulation." In other words, participants are made to believe something that may not necessarily be true. An example of this is a potential use of placebo sugar pills. If a researcher is testing a medication to see whether it will help cure a headache, they will also give out fake medicine just to see if the mere act of ingesting a pill is curing a headache rather than the actual medication. In other words, it's possible that just thinking you're taking something to make a headache go away will actually make it go away. This is called the "placebo effect," and is present for both actual treatments and control "treatments." If someone is made to believe they may be taking an actual medication but is actually taking a placebo, this would be a manipulation.

The experiment you just participated in involves a manipulation called the "Minimal Group Paradigm," or MGP for short. Researchers have shown that if you use a manipulation leading people to believe they share a common trait with others, they will accept this as a real part of their identity and will actually harm their own self-interest in order to get a relative benefit over other, out-groups. One example involves counting jellybeans in a jar. Subjects are asked to guess how many jellybeans are in a jar. No matter what they guess, they are randomly told they are an over- or an under-guesser. When asked to distribute money in various ways to their own group of under-guessers and the out-group of over-guessers, they will make decisions to get a *relative* benefit rather than a *maximal* benefit, and researchers ascribe this to the notion of in-group preference. Notice that people who are labeled under- and over-guessers aren't even really under- and over-guessers since their label was randomly assigned. The groups they are placed into don't really exist, but through the MGP, participants make them exist.

Our manipulation was the ascription of perceptual types. You were recently told that you have either a Type Y- or a Type H-oriented perceptual type. These terms do not mean anything, and they were assigned to participants randomly. We chose this manipulation because it is hard to detect and because MGP research is so prevalent that many of the assignment tasks are now commonplace. To reiterate, you are neither a Type Y- or a Type H-oriented type; these terms are completely fabricated.

As stated, MGP research has a long and fairly thorough tradition, but at no point that we could discover has the MGP been tested in two conditions, one where participants are integrated and the other where they are segregated, which is what we did here. If you were seated amongst participants with the same color folder as you then you were in the segregated condition. If you were seated randomly (folders had no apparent logic to their placement), you were in the integrated condition. We wanted to see how the MGP differed in each of these two conditions.

Results can be made available to you after we complete our analysis, please contact research team if you are interested.

The primary researcher for this study is Ryan Enos who can be reached at 1737 Cambridge St. Cambridge, MA 02138 CGIS K406, whose email address is renos@gov.harvard.edu, and whose phone number is (617)-496-1724.

Figure S.6: *Debriefing Form*

S.4.6 Script for Study 2

(PERCEPTUAL TYPE ASSIGNMENT SCRIPT)

RA 1

(RA 1 starts inside of the lecture hall where they will verify identification and will find each participant's ID number. The door will be held open with a doorstop once RAs are ready to start signing people in. People should stand in line and not rush into the lecture hall. RAs will have two clipboards, one of them, the verification clipboard, will have only the names of participants who have been invited. The other will have only ID number, lecture hall seat number, and a blank space for RAs to fill in names. RAs will fill in names exactly as they are shown on the verification clipboard. Names will be filled in in the order in which participants arrive, up to 20 names. If more than 20 show up, those above 20 will be paid \$10 and will be thanked and sent home. They will then hand out lanyards with participant ID numbers corresponding with the row the RA wrote their name on, and will inform participants of their seat number, which is also on the sign-in clipboard. They will also hand each participant a scantron and a consent form. Once the last participant has arrived, or we are 5 minutes past the show-up time, RA 1 will stop accepting arrivals 10 minutes after the show-up time RA 1 will come into the lecture hall and wait to collect scantrons. The lecture hall is setup with wordsearches at the head of the room so they can be passed out later.)

RA 2

(RA 2 begins inside the lecture hall at the podium, where they can direct the presentation. RA 2 will begin the presentation 5 minutes after the show-up time.)

Hello and thank you for participating. Please turn off all cellular or internet connected devices before we begin. Before we get started, we would like you to take a few minutes to review the consent form for this study. You will find the consent form on top of the packet of papers provided to you. If you agree to participate in the study, please sign the consent form. If you decide you do not want to participate please raise your hand and we will collect your materials. Once you've finished, please remain silent so that others can finish reading it. When you are finished please place your consent form face down on your desk so we know you are finished. We will collect them later.

(Allow a couple minutes for participants to read the form.)

RA 2

This research session will take approximately 45 minutes. In this portion of the study, you will be exposed to various images and asked to make judgments about these images. You will then be asked to perform another task. Once these tasks are complete, we will provide instructions for the next part of the study. For each task we will provide a set of detailed instructions and will allow for questions if those instructions weren't clear enough. Please do not speak amongst yourselves during the course of the session as we don't want people's answers to influence the answers of others.

You will need your scantron for the first section.

This is what a scantron looks like. (Switch to the slide with the example scantron) Please look at this example scantron. You will be asked to fill in your scantrons in a moment. Please notice that on the example scantron, “A” has been selected for question 1, “B” has been selected for question 2, and so on. When you select an answer you should do your best to fill in the correct letter completely.

(PERCEPTUAL TYPE MANIPULATION SCRIPT)

(Participants will remain where they are seated for this section.)

RA 2

In this section, we will be interested in discovering something called a “perceptual type.” Past researchers have shown that individuals can be classified as one of two types of people. The two types are known as Type-H and Type-Y. For this part of the project, we are trying to see if we can use a new method to point out what type people might be.

Please take a moment to locate your scantron and to fill in your ID number where it says “Name,” as you can see in the example. Your ID number is the number on your badge. In the next several minutes you will be shown a series of pictures and a group of adjectives that could possibly describe those pictures.

(RA 2 switches to the first slide)

Each image will be shown for approximately thirty seconds, and for each image, you must select which adjective best describes the image. If none of the adjectives seems appropriate, please select the one that you feel is closest. If you are unfamiliar with one or more of the adjectives, ignore them and select from the group you are familiar with. You will see ten images total, and for each image you will be shown five adjectives, marked A, B, C, D and E. Each image has a number on the bottom left corner, directly below the adjectives. For each number, please mark the corresponding letter on the scantron for the image.

Behind me is an example of the type of slides you will see.

Here you see an image of a truck driving near a field and a series of adjectives with a slide that is labeled “example”. Shortly you will be shown 10 more images like this. For each image you are shown you will select your preferred adjective. You will have approximately 30 seconds for each image.

If you are having any difficulty please raise your hand and a research assistant will come to help you. We will now begin the slide show.

(Begin to show the slides, making sure participants have enough time to select an adjective for each image. RA 2 will say the number of the slide just before they switch to that slide.)

(RA 1 begins to collect scantrons as soon as the slideshow is finished, prompting RA 2 to continue the script. RA 1 will move to room 208 to pretend to run the scantron machine. They should come back in 5 minutes.) . RA 1 will immediately take the sign-in clipboard, the consent forms and the scantrons to the waiting room (Sever Hall 208) and will set up the colored folders based on a seating chart which will be stored in Sever Hall 208. This seating chart will show which

ID number is assigned to which seat. RA 1 will simply remove **THE ID NUMBER LABEL FROM** any folders that are associated with ID numbers which have not been assigned to subjects. They will leave all the folders in the waiting room, but some of them might not have ID numbers associated with them.

RA 2

Okay, it looks like we're all finished. At this time we will collect your scantrons and consent forms and take them to the computer lab to give us a sense of what perceptual type you are. This process will take a few minutes. In the meantime, we would like you to begin the next task. We will now hand out your second task. Shortly you will receive a wordsearch. Once you receive this wordsearch please fill in your ID number in the space provided.

(Change slides to the example wordsearch, pass out wordsearches)

Please use your pencil to locate as many words as you can hidden in the wordsearch. As you can see from the example, the word "wordsearch" has been located and circled within the box of words. Please try to find as many words in the wordsearch as you can. Please note that the example on the screen is not the same wordsearch as we've provided you. Remember; please do not speak to each other in order to avoid influencing others' perceptions. Once you are finished please place your wordsearch back in the envelope and place your pencil down so we know you are finished.

(Allow time for them to finish. Start new section after RA 2 comes back.)

Okay. Even if you are not finished, please put your pencil down. While you were completing the wordsearch, we've run your scantrons. We will now move to the next phase of this study so that the next group of participants can make use of this lecture hall. Please leave your wordsearch and pencil on the seat next to you and we will collect it later. Please bring everything you brought with you to the next room. Please exit the lecture hall from the same door in which you entered, and [RA 1] will escort you to the waiting room.

RA 1

Hello again, in a moment you will follow me to the next part of the study. When we get there, please sit in the seat with the folder which has your participant ID number on it. Please do not move to a different seat. Please do not open your folder until instructed to do so. Please do not speak to anyone else. Please follow me.

(RA 1 leads them to the waiting room which is Sever Hall 208 and allows time for them to find their seats, then stays in the waiting room until the script says otherwise.)

RA 1

Please locate the folder with your ID number and sit in that seat. In a few minutes you will be directed to a new room, please do not talk or use your cell phone in that time. Please do not open your folder.

(Once they are all seated, RA 1 continues the script)

You will discover your perceptual type based on the color of the folder placed in front of you. If you have an orange folder, you have been identified as a Type-H person. If you have a purple folder, you have been identified as a Type-Y person.

(RA 2 will show up at the waiting room 7 minutes after the last participant leaves the lecture hall. Participants will wait for approximately 5 minutes in silence, in which time RA 2 will arrive. Once RA 2 arrives, RA 1 will continue the script.)

In the next part of the study you will be asked to fill out a survey making judgments about what you've observed so far about perceptual types. In order to keep these answers anonymous you will be directed to a room where you can fill out your survey in private. Please do not talk or use your cell phones during this time.

RA 2

Okay, the rooms are prepared. Each room has a sign on it that says the room is reserved. These are the rooms you will use.

Once you locate your room you will find an open laptop and you will have your folder. Please begin the survey on the laptop. You will begin by inputting your participant ID number and then inputting it a second time to verify. Once you do that, you will proceed to answer the survey questions. Please follow all directions on the laptop. Please do not open your folder until the survey tells you to. If you have any questions once you are in the next room please step into the hallway and one of the researchers will come to you to answer them. Please do not unplug or turn off your laptop at any time. Do not use the laptop for anything other than the survey. Once you are finished with your survey please come into the hallway and a research assistant will collect your materials and give you your payment.

(RAs will have paper surveys available in case the laptops don't work for whatever reason. RAs should be prepared to provide a paper survey as quickly as possible if any of the participants are having computer problems)

In order to help you find your room we've made up a map of this building with your locations listed on the map, which we will now hand out.

(RAs hand out maps)

Please take a moment to study that map now. The number with the larger font is the room number; the number with the smaller font is your participant ID number. Please pay attention to what room and floor your participant number is located in so you will know where to go. We will give you a moment to locate your room number now. (Wait 15 seconds). If your ID number is located on the first floor, please follow me down there now with all of your belongings and materials.

(RA 2 leads half of the participants down to the first floor)

RA 1

Okay, the rest of you please follow me into the hallway and I will direct you to your rooms. Please bring all of your belongings and materials.

(RA 1 leads the rest of the participants to the hallway)

(ATTITUDINAL, RESOURCE ALLOCATION QUESTIONS)

RA 1 & 2

(Both RAs will stand in the hallway near the stairwell on their respective floor. When participants exit their rooms, they will bring their materials to their respective RA. The RA will collect their materials, then pass out a debriefing form and the cash payment while having participants sign their name to indicate they received payment. At this point the experiment ends. If, after 20 minutes, a participant has not come out of their room and RA should check on them. RA's should collect all materials at the end of the hour, even if participants are not finished.)

S.5 Study 2: Purpose of Study Codebook

Enos/Celaya 2015 Experiment Codebook

Your task is to read through the participants' responses to the question "In your own words, what do you think / was the purpose of this study?" and to code their answers using this "codebook." This document will provide you guidelines on how to code these answers. For each answer they provide, you will see 5 categories that this response might fall into. In Microsoft excel, you will type either a 1 or a 0 for each category. In other words, for each answer a participant gives, you will type a total of five 0s and/or 1s. An answer might fit none of the categories (all 0s) or all of the categories (all 1s) or any combination in-between. After the list there will be a brief explanation of each category with examples. These should provide you enough guidance to code each of the answers.

The Code List:

- 1) **PERCEPTION:** perception of groups/concepts/ideas
- 2) **GROUPING:** group identity/group type/classification
- 3) **DISCRIMINATION:** discrimination/prejudice/judgment/bias/group bias
- 4) **SEGREGATION:** segregation/spatial arrangements/spatial grouping
- 5) **TYPE DISBELIEF:** doubt/disbelief in the grouping/types

Explanations:

1) Perception of groups/concepts/ideas:

If a participant's answer suggests that they think that our study is about **perception**, you will mark a 1 in this column, otherwise you will mark a 0. These answers can mention perception directly or they can use more common language synonymous with perception, such as "how people look at the world."

2) Group identity/group type/classification:

If a participant's answer suggests that they think that our study is about **grouping**, you will mark a 1 in this column, otherwise you will mark a 0. These answers can mention being placed into a group, how groups interact with each other, group perception, classifying people etc. This includes talking about their group "Type," as in Type H or Type Y.

3) Discrimination/prejudice/judgment/bias/group bias:

If a participant's answer suggests that they think that our study is about **discrimination**, you will mark a 1 in this column, otherwise you will mark a 0. These answers should be pretty straightforward and often contain these words exactly. If they think that we are interested in how *alike* the groups are, that is still a type of judgment/discrimination and should be coded 1.

4) Segregation/spatial arrangements/spatial grouping:

If a participant's answer suggests that they think that our study is about **segregation**, you will mark a 1 in this column, otherwise you will mark a 0. You might need to look for keywords here as they don't tend to use this language. What we are interested in here is whether or not they think this study is about how they are arranged in physical space.

5) Doubt/disbelief in the grouping/types:

If a participant's answer suggests that they think that our study is about **type disbelief**, you will mark a 1 in this column, otherwise you will mark a 0. In other words, if participants think that the types we arranged them into weren't real things, or if they didn't believe anything we told them, you will code this as 1. **ONLY** code this as 1 if they specifically mention their doubts in one way or another.

Considerations:

Remember, we are trying to guess what they are guessing the experiment is about.

If they say something like "I'm not sure, but maybe..." or "I'm not sure, but I think that..." and then they go on to give a guess as to what the experiment is about, just ignore the first part of their answer and treat it as if they have a strong sense as to what the experiment was about.

Coding is somewhat tedious work. In order to make sure you don't go into autopilot, you may want to consider taking periodic breaks or to have a light snack while you are coding. Having a valid set of coded responses requires that all coders have very similar answers when coding. If they don't, we will have to start over from scratch. In order to obviate this potential setback, best practice is just to do your best the first time around.

S.6 Study 2: Arbitrary Groups Assignment Slideshow Test

WELCOME

Please don't talk or use your cell phones for the duration of this study.

Please do not mark or open any of your materials until instructed to do so.

Precision
DATA
PRODUCTS

INSTRUCTIONS
• USE NO. 2 PENCIL ONLY
• ERASE COMPLETELY TO CHANGE
• EXAMPLE: A → B → C → D → E

1-800-362-5964 • PDP-815 QUIZ

NAME 321
SUBJECT _____

KEY

1 % 2 3 5

(T) (F)

1

2 a

3 a b

4 a b c

5 a b c d

6 a b c d

7 a b c d

8 a b c d

9 a b c d

10 a b c d

11 a b c d

12 a b c d

13 a b c d

14 a b c d

15 a b c d

FEED THIS DIRECTION

www.PrecisionDataProducts.com

1 2 3 4 5 6 7 8 9 0 N 0000

A: Raw

B: Crisp

C: Current

D: Novel

E: Modern

EXAMPLE



A: Hardy

B: Tenacious

C: Smart

D: Volatile

E: Finished

1



A: Illusory

B: Illogical

C: Phony

D: Beguiling

E: Irrational

2



A: Concrete

B: Sound

C: Close

D: Stable

E: Heavy

3



A: Spirited

B: Animate

C: Hyper

D: Blithe

E: Vigorous

4



A: Hungry

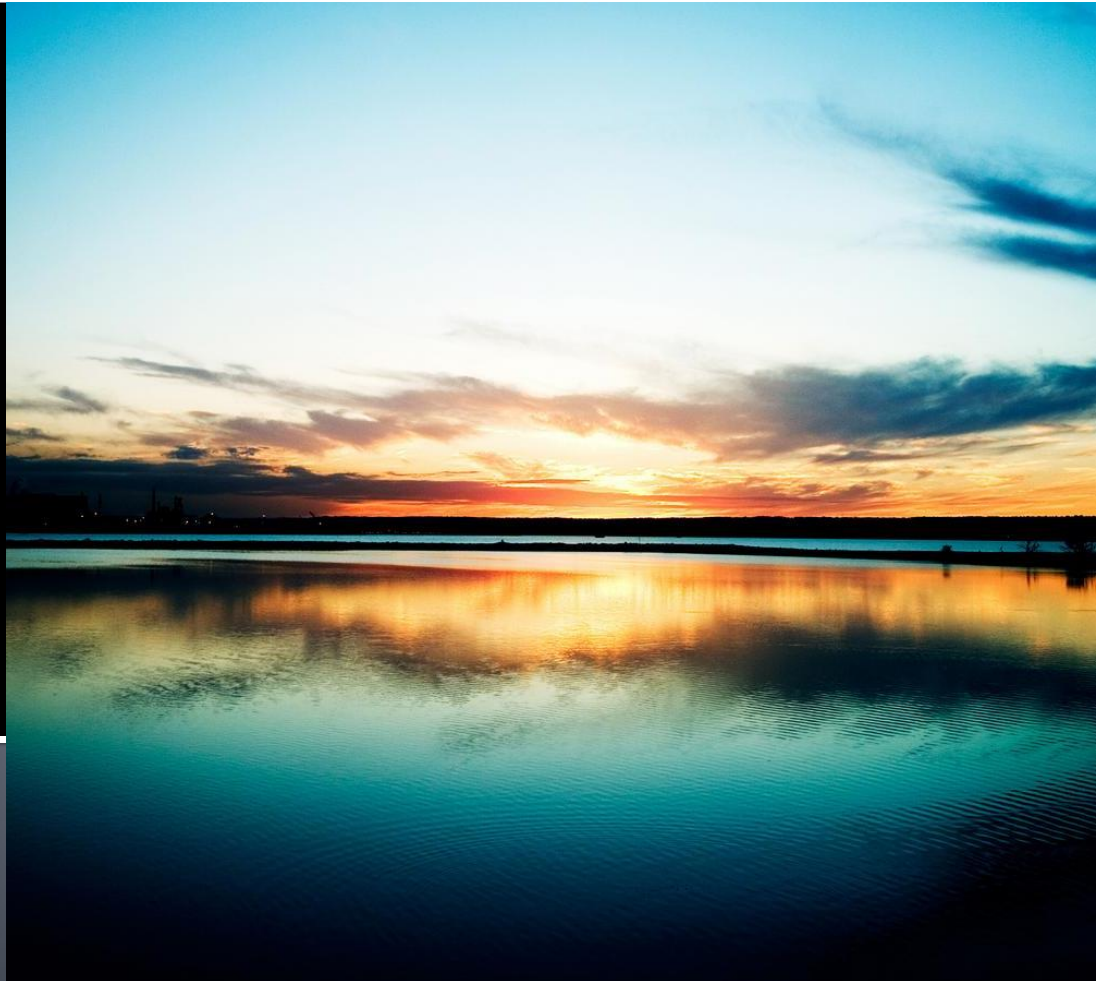
B: Earnest

C: Ardent

D: Inspired

E: Eager

5



A: Rude

B: Flighty

C: Insolent

D: Glib

E: Playful

6



A: Frivolous

B: Meager

C: Paltry

D: Minute

E: Petty

7



A: Rousing

B: Hectic

C: Inspiring

D: Moving

E: Bracing

8



A: Scornful

B: Derisive

C: Ironic

D: Mocking

E: Skeptical

9



A: Morose

B: Gruff

C: Brooding

D: Obstinate

E: Fretful

10



**Please Stop and listen for
instructions**

**Please don't talk or use your cell phones for
the duration of this study**



12

Word Search Example

S.7 Study 1: Survey Instrument



DLABSS Master Survey

This survey is administered by the research team led by Professor Ryan Enos at the Department of Government of Harvard University. Please consider this information carefully before deciding whether to participate in this research.

Purpose of the research: To investigate the perception of ethnicity in response to diverse stimuli.

What you will do in this research: You will view tables containing 16 human faces. One of the faces in each table will be boxed. You will be asked to rate the boxed face along certain scales. On top of this, you will be asked a few multiple-choice and open-response questions at the end of the survey.

Time required: Participation will take approximately 10 minutes to complete.

Risks: There are no anticipated risks associated with participating in this study. The effects of participating should be comparable to those you would experience from viewing a computer monitor for 15 minutes and using a mouse or keyboard.

Benefits: At the end of the study, we will provide a thorough explanation of the study and of our hypotheses. We will describe the potential implications of the results of the study both if our hypotheses are supported and if they are disconfirmed. If you wish, you can send an email message to Antonio Coppola, <acoppola@college.harvard.edu>, and we will send you a copy of any manuscripts based on the research (or summaries of our results).

Compensation: You will receive \$.65 for your participation in this study.

Confidentiality: Your participation in this study will remain confidential and there will be no link between your responses and your identity.

Participation and withdrawal: Your participation in this study is completely voluntary, and you may withdraw at any time without penalty. You may withdraw by informing the researcher that you no longer wish to participate (no questions will be asked), and your compensation will be calculated based on the time you spent in the study.

How to contact the researchers: If you have questions or concerns about your participation or payment, or want to request a summary of research findings or for any problems related to this study, you may also contact the faculty member who is supervising it: Ryan D. Enos, <renos@gov.harvard.edu>.

Whom to contact about your rights in this research: For questions, concerns, suggestions, or complaints that have not been or cannot be addressed by the researcher, or to report research-related harm, please contact the Committee on the Use of Human Subjects in Research at Harvard University, 1414 Massachusetts Avenue, Second Floor, Cambridge, MA 02138. Phone: 617-496-2847. Email: cuhs@fas.harvard.edu

- The nature and purpose of this research have been sufficiently explained and I agree to participate in this study. I understand that I am free to withdraw at any time without incurring any penalty.
- I disagree with the terms presented above, and I choose not participate in this study.

First, please answer a few brief questions about yourself.

In which country were you born?

What is your Zip Code?

In which Zip Code have you lived in the longest?

Are you male or female?

- Male
- Female

What year were you born?

Do you speak English at home?

Yes

No

What language do you speak at home?

What is your race?

White

Black, African-American

American Indian or Alaska Native

Asian Indian

Japanese

Native Hawaiian

Chinese

Korean

Japanese

Guamanian or Chamorro

Filipino

Vietnamese

Samoan

Other

Generally speaking, do you consider yourself a Democrat or a Republican?

Democrat

Republican

Other

Generally speaking, do you consider yourself closer to Democrats or Republicans?

-
- Democrats
 - Republicans

In politics, do you consider yourself liberal or conservative?

- Liberal
- Conservative

What is your annual salary (including bonuses and commissions) in U.S. dollars?

- None or less than \$2,999
- \$3,000 -\$4,999
- \$5,000 -\$7,499
- \$7,500 -\$9,999
- \$10,000 -\$10,999
- \$11,000-\$12,499
- \$12,500-\$14,999
- \$15,000-\$16,999
- \$17,000-\$19,999
- \$20,000-\$21,999
- \$22,000-\$24,999
- \$25,000-\$29,999
- \$30,000-\$34,999
- \$35,000-\$39,999
- \$40,000-\$44,999
- \$45,000-\$49,999
- \$50,000-\$59,999
- \$60,000-\$74,999
- \$75,000-\$89,999
- \$90,000-\$99,999
- \$100,000-\$109,999
- \$110,000-\$119,999
-

- \$120,000-\$134,999
- \$135,000-\$149,999
- \$150,000 and over
- Don't know

What is the highest level of education you completed?

- Elementary school
- Middle school
- Some high school
- High school graduate
- Associate's Degree
- B.A. or B.S.
- Master's
- Ph.D.
- M.D.
- J.D.
- D.D.S

Are you of Hispanic, Latino, or Spanish origin?

- Yes
- No

From which country are your Hispanic, Latino, or Spanish origins?

- Mexico, Mexican-American, Chicano
- Puerto Rico
- Cuba
- Other

What is your occupation?

Are you right or left handed?

- Right
- Left

Intro

In this survey, you will be asked to rate the appearance of human faces along a scale from "Very African-American" to "Very Caucasian". A face can be one of these extremes or somewhere in between.

We are interested in your perception, there is no right or wrong answer.

The following are warm-up question, meant to introduce you to the research interface. Once you go to the next page, you will have 5 seconds to look at a table with 16 human faces. One of the faces will be in a red box. After the 5 seconds have elapsed, you will be asked to rate the boxed face. This pattern will repeat as you proceed.

Please go to the next page as soon as you are ready to proceed to the warm-up questions.

Browser Meta Info

This question will not be displayed to the recipient.

Browser: **Chrome**

Version: **44.0.2403.157**

Operating System: **Windows NT 6.3**

Screen Resolution: **1080x1920**

Flash Version: **18.0.0**

Java Support: **1**

User Agent: **Mozilla/5.0 (Windows NT 6.3; WOW64) AppleWebKit/537.36 (KHTML, like Gecko)**

Chrome/44.0.2403.157 Safari/537.36

Please observe the following faces.



These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face you just saw. On this scale, 1 corresponds to *"This face looks very African-American"*, and 7 corresponds to *"This face looks very Caucasian"*. A 4 is *"Ambiguous"* or in between. You can use any of the numbers on the scale.

1 (Very African-American)	2	3	4 (Ambiguous)	5	6	7 (Very Caucasian)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please observe the following faces.



These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face you just saw. On this scale, 1 corresponds to *"This face looks very African-American"*, and 7 corresponds to *"This face looks very Caucasian"*. A 4 is *"Ambiguous"* or in between. You can use any of the numbers on the scale.

1 (Very African-American)	2	3	4 (Ambiguous)	5	6	7 (Very Caucasian)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The previous two questions served to help you get familiar with the survey interface, and will not be used for research purposes. The rest of the survey will proceed in exactly the same manner. You will be asked to rate 30 faces.

Please go to the next page as soon as you are ready to begin the survey.

Integrated Triplets

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise1

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise2

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise3

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise4

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise5

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise6

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise7

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise8

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise9

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise10

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise11

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise12

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise13

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise14

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise15

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise16

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise17

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise18

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise19

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise20

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-
American)



2



3



4 (Ambiguous)



5



6



7 (Very
Caucasian)



Noise21

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-
American)



2



3



4 (Ambiguous)



5



6



7 (Very
Caucasian)



Noise22

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise23

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Noise24

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



Segregated Triplets

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)



2



3



4 (Ambiguous)



5



6



7 (Very Caucasian)



These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*

Last Click: *0 seconds*

Page Submit: *0 seconds*

Click Count: *0 clicks*

Please assign a score in the 1-7 range to the appearance of the boxed face.

1 (Very African-American)

2

3

4 (Ambiguous)

5

6

7 (Very Caucasian)



Intermission

Thank you for your responses. You are almost done. First, we would like to ask you just a few more questions, after which the survey will end.

Please go to the next page as soon as you are ready.

Symbolic Racism 2000

Please rate your level of agreement with the following statement: *"It's really a matter of some people not trying hard enough; if blacks would only try harder they could be just as well off as whites."*

- Strongly agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree

Please rate your level of agreement with the following statement: *"Irish, Italian, Jewish and many other minorities overcame prejudice and worked their way up. Blacks should do the same without any special favors."*

- Strongly agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree

Please rate your level of agreement with the following statement: *"Generations of slavery and discrimination have created conditions that make it difficult for blacks to work their way out of the lower class."*

- Strongly agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree

Please rate your level of agreement with the following statement: *"Over the past few years, blacks have gotten less than they deserve."*

- Strongly agree
- Somewhat agree
- Somewhat disagree
-

☹ Strongly disagree

Conclusion

Just your best guess, what do you think is the purpose of this research?

Do you have any comments? If so, please enter them below.

Survey Powered By **Qualtrics**

S.8 Study 2: Survey Instrument



ID_Block

Please refer to your ID badge and enter your participant ID number below.

ID number

Confirm ID number

Click NEXT to continue.

Instructions:

You will now be asked to answer several questions about Type H and Type Y people.

Please follow the instructions carefully in each section before you answer these questions.

Specifically, each set of instructions will tell you whether the questions in that section are about Type H or Type Y people, or both.

Please answer the questions honestly. Your answers will remain anonymous.

Please verify your perceptual type. Either select Type H or Type Y below. You can refer to your folder if you do not remember.

- Type H
- Type Y

identification_Y

The following statements are about **TYPE Y** people. We would like to know how much you agree or disagree with each statement.

The answers to these questions range from strongly disagree and to strongly agree.

2) I feel like I belong in a group with **Type Y** people.

Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1) I would like to get to know other **Type Y** people.

Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3) If I were here for a long period and had a choice, I would prefer to be grouped with **Type Y** people.

Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4) I am in competition with **Type Y** people.

Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5) **Type H** people are similar to **Type Y** people.

Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

similarities_Y

The following statements are about **TYPE Y** people. We would like to know how much you agree or disagree with each statement.

The answers to these questions range from strongly disagree to strongly agree.

Please choose the answer that best represents your belief.

1) I have things in common with **Type Y** people.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree

2) When it comes to my appearance, I look similar to **Type Y** people.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree

politics_Y

For this section please indicate, when it comes to politics, how liberal or conservative you think **TYPE Y** people are on a scale from very liberal to very conservative. Other numbers indicate answers in-between.

1) When it comes to politics, how liberal are **Type Y** people?

Very liberal Liberal Somewhat liberal Neutral Somewhat conservative Conservative Very conservative

appearance_Y

For this section you will be asked to make some guesses about **TYPE Y** people. Use your

best guess to write in answers in the blanks.

1) On average, in feet and inches, what is the height of **Type Y** people?

Feet:

Inches:

2) On average, in pounds, what is the weight of **Type Y** people?

Pounds:

3) On average, in years, how old are **Type Y** people?

Years old:

4) On average, how much money do **Type Y** people earn per year at their jobs?

attributions_Y

*The following is a list of characteristics. Please use the scale to give your expectations about the characteristics of **TYPE Y** people.*

The answers to these questions range from strongly disagree to strongly agree, where strongly disagree means you believe the characteristic is very untrue and strongly agree means the characteristic is very true. The other answers are somewhere in between.

Please choose the answer that best represents your belief.

*How true is each characteristic of **Type Y** people?*

1) Type Y people are **capable**:

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree

2) Type Y people are **intelligent**:

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree

3) Type Y people are **stupid**:

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree

4) Type Y people are **incompetent**:

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree

identification_H

*The following statements are about **TYPE H** people. We would like to know how much you agree or disagree with each statement.*

The answers to these questions range from strongly disagree and to strongly agree.

1) I would like to get to know other **Type H** people.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree

2) I feel like I belong in a group with **Type H** people.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree

3) If I were here for a long period and had a choice, I would prefer to be grouped with **Type H** people.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree

4) I am in competition with **Type H** people.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree

5) **Type Y** people are similar to **Type H** people.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree

similarities_H

*The following statements are about **TYPE H** people. We would like to know how much you agree or disagree with each statement.*

The answers to these questions range from strongly disagree to strongly agree.

Please choose the answer that best represents your belief.

1) I have things in common with **Type H** people.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree



2) When it comes to my appearance, I look similar to **Type H** people.

Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

politics_H

*For this section please indicate, when it comes to politics, how liberal or conservative you think **TYPE H** people are on a scale from very liberal to very conservative. Other numbers indicate answers in-between.*

1) When it comes to politics, how liberal are **Type H** people?

Very liberal	Liberal	Somewhat liberal	Neutral	Somewhat conservative	Conservative	Very conservative
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

appearance_H

*For this section you will be asked to make some guesses about **TYPE H** people. Use your **best guess** to write in answers in the blanks.*

1) On average, in feet and inches, what is the height of **Type H** people?

Feet:

Inches:

2) On average, in pounds, what is the weight of **Type H** people?

Pounds:

3) On average, in years, how old are **Type H** people?

Years old:

4) On average, how much money do **Type H** people earn per year at their jobs?

attributions_H

*The following is a list of characteristics. Please use the scale to give your expectations about the characteristics of **TYPE H** people.*

The answers to these questions range from strongly disagree to strongly agree, where strongly disagree means you believe the characteristic is very untrue and strongly agree means the characteristic is very true. The other answers are somewhere in between.

Please choose the answer that best represents your belief.

*How true is each characteristic of **Type H** people?*

1) Type H people are **capable**:

Strongly disagree

Disagree

Somewhat disagree

Neutral

Somewhat agree

Agree

Strongly agree

2) Type H people are **intelligent**:

Strongly disagree

Disagree

Somewhat disagree

Neutral

Somewhat agree

Agree

Strongly agree

3) Type H people are **stupid**:

Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4) Type H people are **incompetent**:

Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

similarities_B

*The following statements are about **TYPE H** and **TYPE Y** people. We would like to know how much you agree or disagree with each statement.*

The answers to these questions range from strongly disagree to strongly agree. The other answers are somewhere in between.

Please choose the answer that best represents your belief.

1) It would be useful to know whether someone is a Type H or Type Y person while choosing a friend.

Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2) It would be useful to know whether someone is a Type H or Type Y person when deciding whether to date someone.

Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3) It would be useful to know whether a neighborhood is primarily Type H or Type Y peoples when deciding where to live.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree

End_Block

In your own words, what do you think was the purpose of this study?

Do you have any other comments?

allocation

Read these instructions carefully

In this section you will have an opportunity to divide some money between yourself and other people here today. Other people are being asked to make similar decisions.

We will really allocate the money as you decide. However, what you do is completely confidential. Nobody else will know what you've done. You will decide how to divide \$10 between yourself and two other people.

You can share some amount with either person or keep it for yourself. What you decide to give to those people will be given to them later. This will not affect your \$30 payment for taking part in this study, you will receive that today no matter what you do with the money in these envelopes.

Now please open your folder and look in the right pocket for four envelopes. Please remove the envelopes and close the folder.

When you have completed this task, you will be asked more questions about perceptual types.

When you're ready, click NEXT to follow the instruction below.

1. We've given you four envelopes, one envelope is marked "money", another is marked "You", another is marked "Type H", and another is marked "Type Y".

2. Open the envelope marked "money". You will find 10 one dollar bills. We have counted this carefully and know there is \$10 in this envelope. Now you can divide this money between you and other players by placing it in the other envelopes.

3. Whatever amount you put in the envelope marked "You" is yours to keep. Please put that in your pocket and take it home with you.

4. Whatever amount you put in "Type H" envelope will be given to a Type H person at a later time.

5. Whatever amount you put in the "Type Y" envelope will be given to a Type Y person at a later time.

You can divide the money in any way you like. No other participants will ever know your decision. Be sure not to leave any money in the "money" envelope, divide all \$10.

When you are done, please seal the Type H and Type Y envelopes and put them back in your folder.

Remember, the envelope marked You is yours to take.

When you have done this task, click NEXT to continue the survey.

References

Imai, K., King, G., and Nall, C. (2009). The essential role of pair matching in cluster-randomized experiments, with application to the mexican universal health insurance evaluation. *Statistical Science*, 24(1):29–53.