

Supplemental Online Materials

Supplemental Analyses – Study 1

Response latency. Log-transformed response latencies were submitted to a 2 (Race: Black vs. White) x 2 (Condition: Scarcity vs. Control) mixed-factorial ANOVA. This analysis revealed a trending but non-significant main effect of race, such that participants made slower decisions for White targets (mean raw latency $M = 2462.30$ ms, $SD = 881.55$) compared with Black targets ($M = 2428.29$ ms, $SD = 869.97$), $F(1,69) = 2.35$, $p = .130$. There was no main effect of condition or interaction, F 's < 1.73 , P 's $> .192$.

Scarcity effects on N170 amplitude. Disruption to configural processing of faces is most directly evident in N170 latency (e.g., Balas & Koldewyn, 2013; Bentin et al., 1996; Eimer, 2000b; George, et al., 1996; Itier et al., 2017; Jacques & Rossion, 2010), which is why our main focus was on delay. However, this delay often occurs in tandem with increased amplitude (e.g., Bentin et al., 1996; Itier et al., 2007; Eimer, 2000b), and together this pattern is thought to signify difficulty resolving the percept as a face and trouble processing it configurally (e.g., Itier et al., 2007; Rossion et al., 2000; Latinus & Taylor, 2006; Jacques & Rossion, 2010). Thus, to bolster our interpretation of the Black N170 delay under scarcity as a decrease in configural processing, we submitted peak N170 amplitude scores in the right hemisphere to a 2 (Race: White vs. Black) x 2 (Condition: scarcity vs. control) mixed-factorial ANOVA.¹

¹ One criticism of peak amplitude measures is insensitivity to multiple peaks within a given time window. Although all of our participants exhibited a single peaked waveform within our window of interest, we also conducted tests on the area under the curve as a complementary approach that is less vulnerable to multiple peaks. This analysis produced the same pattern of N170 amplitude results, such that there was no main effect of condition, $F(1,69) = 0.05$, $p = .824$, but a

Although the interaction effect was not significant, $F(1,69) = 0.39, p = .537$, the key predicted effect of race within the scarcity condition was significant, $F(1,69) = 8.12, p = .006$, indicating greater negative amplitudes to Black ($M = -3.74, SD = 2.31$) compared with White faces ($M = -3.21, SD = 1.98$). Thus, Black faces in the scarcity condition exhibited a pattern characteristic of decreased configural processing (i.e., delayed peak combined with increased amplitude).

Participants in the control condition also exhibited greater N170 amplitudes to Black ($M = -4.05, SD = 2.45$) compared with White faces ($M = -3.68, SD = 2.46$), $F(1,69) = 4.02, p = .049$.

However, without an accompanying latency difference, this pattern (i.e., no delay combined with greater amplitudes) suggests, if anything, a processing *advantage* for Black faces in the neutral control condition.

Scarcity and Race effects on P1 and P2. The high temporal resolution of ERP methodology allowed us to test secondary questions about where in the processing stream scarcity effects first arise and what psychological processes are affected by scarcity. In two exploratory analyses, we tested the effects of scarcity, race, and their interaction on the P1 and P2 ERP components, which are believed to reflect early orienting and anticipatory attention, respectively. P1 and P2 components were scored as the peak positive amplitude between 60 and 140ms at Pz, and the peak positive amplitude between 150 and 210ms at Cz, where they were maximal, respectively. The P1 amplitude analysis revealed no main effect of scarcity condition, $F(1,69) = 1.01, p = 0.32$ and a marginal effect of race, $F(1,69) = 3.18, p = .079$, such that P1

significant main effect of race, $F(1,69) = 13.27, p = .001$, such that area under the curve was greater for Black faces than White faces. Again, there was no interaction between race and condition, $F(1,69) = 1.28, p = .262$.

amplitudes were greater for White ($M = 2.39$, $SD = 2.21$) than Black faces ($M = 2.08$, $SD = 2.06$), possibly reflecting low level visual differences that remain even after adjusting Black and White faces for luminance differences (e.g., Firestone & Scholl, 2015). Although the Condition by Race interaction did not reach significance, $F(1,69) = 1.01$, $p = .317$, the pattern of this interaction mirrored the N170 latency findings: Participants in the scarcity condition exhibited smaller P1 amplitudes to Black faces ($M = 1.80$, $SD = 2.07$) compared with White faces ($M = 2.29$, $SD = 2.32$), $F(1,69) = 3.84$, $p = .054$, whereas participants in the control condition did not exhibit this difference, $F(1,69) = 0.31$, $p = .582$. Together these findings tentatively suggest a very early reduction in attentional orienting to Black faces when resources are scarce, which may give rise to downstream configural processing impairments seen in the N170. During scarcity, these White subjects may have implicitly prioritized the processing of White over Black faces, reducing their covert attention to and, thus, visual processing of Black faces. This suggests perhaps the possibility of a pattern of multi-stage mediation, where scarcity influences P1 to influence N170 to influence allocation decisions. Indeed, greater attention to White vs. Black faces marginally predicted longer latencies to Black vs. White faces ($r = .20$, $p = .09$) which predict anti-Black allocation decisions ($r = .26$, $p = .30$). However, the strength of this effect did not differ between conditions, and we were far underpowered to detect such moderated mediation. Future research designed to directly test this question with sufficient power could test the plausibility of this model.

Analysis of P2 latency revealed no main effects or interactions, $F's < .53$, $p's > .470$, suggesting that scarcity effects on Black face processing were limited to the interruption of configural processing and possibly early attentional orienting, and did not influence later attentional processes.

Scarcity and Race on Allocation through N170 delay (full mediation model). Scarcity did not directly predict participants' degree of anti-Black allocation ($B = 0.11$, $SE = .26$, $\beta = 0.05$, $t = 0.43$, $p = .67$, 95% CI = -0.40, 0.62; c path). Scarcity did directly influence N170 delay for Black relative to White faces, $B = -.77$, $SE = .09$, $t = 9.10$, $p < .001$ (a path), and that delay was related to Scarce-Black allocation, $B = .19$, $SE = .03$, $t = 5.75$, $p < .001$ (b path). A bootstrapped mediation analysis revealed an indirect effect such that the N170 delay for Black relative to White faces significantly mediated the effect of scarcity on anti-Black allocation (A x B cross product = 0.14, $SE = 0.09$, 95% CI = .04, .35, $p = .039$).

Scarcity and Race on N170 delay (four non-White participants removed). Condition X Race interaction, $F(1,65) = 6.34$, $p = .014$: under scarcity, N170 latency was significantly delayed to Black faces ($M = 175.33$ ms, $SD = 12.03$) relative to White faces ($M = 172.66$ ms, $SD = 11.95$), $F(1,65) = 12.49$, $p = .001$, whereas in the control condition, the latency did not differ between Black faces ($M = 169.47$ ms, $SD = 11.48$) and White faces ($M = 169.47$ ms, $SD = 11.99$), $F(1,65) < 0.01$, $p > .99$. N170 latency to Black faces was significantly delayed in the scarcity condition compared with the control condition, $F(1,65) = 4.17$, $p = .045$, whereas the latency to White faces did not differ by condition, $F(1,65) = 1.19$, $p = .279$. Again, only the processing of Black faces under scarcity was significantly delayed beyond the typical latency of 170 ms, $t(32) = 2.55$, $p = .016$, 95% CI = 1.07, 9.59 (all other p 's $> .209$).

Supplemental Methods – Study 2

Alternative ROIs. To ensure our results were robust to the ROI selection method, we examined activity in the whole fusiform gyrus using an Automated Anatomical Labeling (AAL) atlas anatomical mask of the right fusiform gyrus and activity in the striatum as defined by 8mm

spheres around the nucleus accumbens (-11,11,-2 and 11,11,-2), as in Knutson et al. (2005) and Tricomi, Rangel, Camerer, & O'Doherty (2010).

Exploratory ROI creation and PPI analyses. Although the primary aim of this study was to understand the relationships between face encoding and higher-level valuation under scarcity, we also examined possible connectivity between the fusiform ROI and OFC and MPFC ROIs to explore additional regions implicated in valuation and mentalizing. We created these anatomical regions of interest by defining masks for the MPFC as Brodmann's Area (BA) 9 and 10 (which includes lateral portions) as well as by using the Dorsal Default Mode Network atlas, which excludes lateral regions (Richiardi et al., 2015). We defined the OFC as BA 11 and 12, and alternatively using the OFC regions of the AAL2 atlas (Rolls, Joliot, & Tzourio-Mazoyer, 2015).

We examined connectivity between the fusiform ROI and the striatum, MPFC, and OFC ROIs with a psychophysiological interaction model (PPI), using the generalized PPI SPM8 toolbox to manage the repeated-measures nature of our data. Participants' data was remodeled in a second-level random effects model with regressors for each trial type (Scarcity/Control x Black/White faces; i.e., the psychological regressors), the timecourse from the Face > Fixation functionally defined fusiform ROI (i.e., the physiological regressor), and the interaction of this timecourse with each trial type. We then examined the interaction of the four condition x fusiform timecourse regressors within each anatomical ROI to identify regions in which the strength of connectivity with the fusiform seed varied by trial type, using a voxel-wise threshold of $P < .005$ and SPM's small-volume correction procedure, $P_{FWE} < .05$. To interpret interaction patterns, we extracted mean parameter estimates (beta values) from within significant ROIs and submitted them to a 2 (Race: Black face vs. White face) x 2 (Condition: Scarcity vs. Control) repeated-measures ANOVA (for descriptive purposes only; significance was determined by the random effects model).

Whole-brain analyses. We also performed a whole-brain analysis to examine neural activity beyond the scope of our primary hypotheses. For the main analyses, we set the family-wise error (FWE) rate at $p < .05$ to correct for multiple comparisons using a voxel-wise threshold of $p < .001$ (uncorrected) and an extent threshold of 33 voxels, as determined by Monte Carlo simulation accounting for spatial correlation among neighboring voxels and implemented in AlphaSim with a smoothing kernel estimated from the data at 3.2 mm. We also performed an exploratory whole-brain analysis with a $p < .005$ voxel-wise threshold (uncorrected) and a more liberal extent threshold of 20 voxels, a widely-used exploratory approach in fMRI research. For whole-brain PPI analyses, we examined results with a voxel-wise threshold of $p < .001$ (uncorrected) and an extent threshold of 86 voxels that were determined by Monte Carlo simulations to set the family-wise error (FWE) rate at $p < .05$.

Supplemental Analyses – Study 2

Response latency. Log-transformed response latencies were submitted to a 2 (Race: Black vs. White) x 2 (Condition: Scarcity vs. Control) repeated-measures ANOVA. As in Study 1, this analysis revealed a main effect of race, such that participants made slower decisions for White targets (mean raw latency $M = 2166.07$ ms, $SD = 394.48$) compared with Black targets ($M = 2111.25$ ms, $SD = 380.45$), $F(1,28) = 4.43$, $p = .044$. There was no main effect of condition or interaction, P 's $> .322$.

Scarcity and race effects on fusiform activity (whole fusiform mask, small-volume corrected). Replicating the results of the main text, this supplemental analysis revealed a significant cluster ($k = 15$) in the fusiform gyrus ($x = 33$, $y = -69$, $z = -12$), $p < .005$ (uncorrected), which survived small-volume correction (SVC), $P_{FWE} < 0.03$, suggesting the fusiform results are highly robust and not the spurious result of ROI construction.

Scarcity and Race effects on Fusiform-striatum Connectivity (8-mm spheres centered on NaCC). Replicating the results of the main text, this supplemental analysis revealed a significant cluster ($k = 17$) in the nucleus accumbens, $p < .001$ (uncorrected), which survived small-volume correction (SVC), $P_{FWE} < 0.03$, suggesting our results are robust to the method of striatum definition.

Scarcity and Race effects on Striatum Activity. We also explored a Condition x Race contrast on striatum activity, $p < .001$ (uncorrected) revealed a significant cluster ($k = 12$) in the striatum, $P_{FWE} < 0.05$, small-volume corrected. We next extracted activity in these voxels to determine their pattern: As expected, the Condition X Race interaction on striatum was significant, $F(1,28) = 5.42$, $p < .03$, as this test is redundant with the SVC analysis. Furthermore, we found that mirroring the effect in the fusiform, in the scarcity condition, activity in the striatum was marginally reduced to Black faces ($M = -0.64$, $SD = 1.42$) relative to White faces ($M = 0.03$, $SD = 1.37$), $F(1,28) = 3.80$, $p = .06$, whereas in the control condition, striatum activity to Black faces ($M = -0.28$, $SD = 1.44$) and White faces ($M = -0.38$, $SD = 1.32$) did not differ, $F(1,28) = 0.07$, $p = .78$. Within-race comparisons further revealed that the effect of scarcity involved both a reduction in activity to Black faces, $F(1,28) = 2.53$, $p = .12$, and enhancement to White faces, $F(1,28) = 4.91$, $p = .04$ (See Figure S3). Although this task did not recruit strong striatum activity overall, it produced meaningful variability, suggesting that valuation of White faces was especially enhanced under scarcity.

Exploratory ROIs. No voxels in the MPFC or OFC survived the small volume correction at the $P_{FWE} < .05$ level.

Whole-brain Condition x Race analyses. No voxels survived the whole-brain analysis with a voxelwise threshold of $p < .001$ (uncorrected) and an extent threshold of 33 voxels.

Results of the exploratory analysis with a voxelwise threshold of $p < .005$ (uncorrected) and an extent threshold of 20 voxels are presented in Table S1.

Whole-brain PPI analyses. Whole-brain results with a voxelwise threshold of $p < .001$ (uncorrected) and an extent threshold of 86 voxels are presented in Table S2.

Scarcity and Race on Allocation through FFA activity (Full mediation model).

Scarcity did not directly influence allocation to Black recipients on average, as the Scarce-Black allocation contrast did not differ from zero, $t(29) = 0.55$, $p = .59$, $CI = -1.02, .59$ (c path). Within-subjects mediation analysis revealed a significant indirect effect of scarcity, such that it increased anti-Black allocation through enhanced functional connectivity between the fusiform and striatum on Scarce-Black trials, $B = 0.43$, $SE = 0.17$, $\beta = 0.56$, $t = 2.64$, $p = .014$.

Main analyses with suspicious participants excluded. The Condition X Race interaction remained marginally significant when excluding three participants who voiced some suspicion at our manipulation, $F(1,28) = 7.16$, $p = .06$ (Figure 3). In the scarcity condition, activity in the right fusiform was significantly reduced to Black faces ($M = 2.85$, $SD = 1.26$) relative to White faces ($M = 3.23$, $SD = 1.27$), $t(26) = 3.03$, $p = .005$, whereas in the control condition, right fusiform activity to Black faces ($M = 3.04$, $SD = 1.19$) and White faces ($M = 3.08$, $SD = 1.30$) did not differ, $t(26) = 0.21$, $p = .834$. According to a within-subjects mediation analysis (Judd, Kenny, McClelland, & 2001), scarcity significantly indirectly increased anti-Black allocation through enhanced connectivity between fusiform and striatum on Scarce-Black trials, $B = 0.41$, $SE = 0.18$, $\beta = 0.53$, $t = 2.35$, $p = .028$.

Scarcity effects on discrimination through fusiform activity. The primary aim of Study 2 was to replicate Scarcity x Race effects on neural encoding using the FFA. The secondary aim was to understand the relationship between diminished face encoding and devaluation under scarcity and to test an extension of the hypothesized pathway in which scarcity

influences allocation through face processing effects on valuation. However, readers may be interested in the indirect effects of Scarcity on Allocation through FFA.

A within-subjects mediation analysis (Judd, Kenny, McClelland, & 2001) revealed a non-significant indirect effect of scarcity on allocation through FFA, but the pattern was such that scarcity increased anti-Black allocation through *reduced* FFA activity to Black faces, $B = 0.15$, $SE = 0.13$, $\beta = 0.21$, $t = 1.15$, $p = .28$, as expected. This weaker pattern is likely because FFA activation provides a relatively less direct and more temporally-imprecise index of configural face encoding than the N170.

Supplemental Supporting Text

Scarcity manipulation: The role of perceived importance. Although we are confident in our manipulation of perceived scarcity (see manipulation checks), it is possible that our scarcity manipulation also reduced perceived task importance, which combined with reduced attention to low status outgroup members, reduced attention to Black faces. Because we focused on perceived scarcity—and found that participants in the scarce condition interpreted their resources as more scarce and more limited than participants in the control condition—we did not ask any questions about the perceived importance of the task. However, there are a few reasons to believe task importance does not drive our scarcity effects:

First, some research suggests that people may actually put *more* effort into a task when they believe resources are limited. For example, when allocating scarce resources, decision makers undertake more complex attributional analyses about recipients (Skitka & Tetlock, 1992), spend more time making decisions (Krosch, Tyler, Amodio, & 2017), and increase attention to scarcity-related concerns (e.g., Fernbach, Kan, & Lynch Jr., 2015; Shah, Shafir, &

Mullainathan, 2015), and put extra effort into resource allocation tasks (Gersick, 1988; Mullainathan & Shafir, 2013; Shah et al., 2012).

Second, our supplemental reaction time data fail to support this alternative hypothesis—in neither study was there a response latency interaction (see this supplement). If the alternative hypothesis were true, we would expect participants to be fastest in the scarcity condition when allocating to Black recipients. The only significant effect in either study was a main effect of race on response latency in Study 2, such that participants made slower decisions for White targets compared with Black targets. This may suggest that overall participants felt the Black recipient trials to be less consequential but does not support the hypothesis that scarcity diminishes the perceived importance of the task or of Black trials, specifically.

Finally, as predicted by a “perceptions of scarcity” vs. a “perception of unimportance” account, we found that in the scarcity condition, participants’ beliefs about the limited nature of their resources was marginally correlated with greater anti-Black N170 latencies ($r = .28$, $p = .11$), while in the control condition these were unrelated ($r = .04$, $p = .81$). That is, to the extent that participants experienced scarcity following our manipulation, they showed longer latencies to Black than White faces. In the control condition, there was no relationship between perceived scarcity and anti-Black N170 latencies. Although this test cannot speak to the perceived importance of the task, it does corroborate our interpretation that the *psychological* experience of \$10/\$100 as more scarce drives our perceptual effects.

Scarcity manipulation: Psychologically similar to real-life conflict? Although scarcity is associated with a wide range of socioeconomic conditions and psychological experiences, the core construct involves the perception that a resource is limited, which is what we aimed to manipulate. Thus, it isn’t clear from these studies whether the present scarcity manipulation induces identical psychological states induced by absolute resource scarcity or realistic conflict

in the real world. However, evidence from previous research suggests that very different and overt manipulations (i.e., telling participants they have less to allocate than others on account of the recession) result in similar intergroup behavioral effects as the present manipulation (Krosch, Tyler, Amodio, & 2017).

Based on years of research in social identity theory on symbolic and realistic threat we believe this manipulation induces a valid form of perceived scarcity. “Real-life” scarcity may take other forms, but this fact does not change the validity of our manipulation or the fact that it is likely to represent important aspects of scarcity effects in society. Thus, while this manipulation may not induce the same experience of scarcity as losing ones’ job or going underwater on a mortgage due to the recession, it is still relevant and reflective of real-world decision contexts. For example, consider a manager that expects to distribute \$10K in end of year bonus funds but only has \$1K. They are likely to experience more resource scarcity than one who expects to distribute \$1K and then receives \$1K. Our findings suggest this manager might perceptually devalue outgroup employees during a bonus review which could result in biased decision making.

The above manager scenario elucidates the decision to eliminate the role of self-interested decision making and the direct effects of competition: There are real-world scenarios of great importance in which scarcity might drive intergroup allocation behavior in the absence of self-interest, and it is important to investigate scarcity and race effects without the influence of desire for personal financial gain and direct competition.

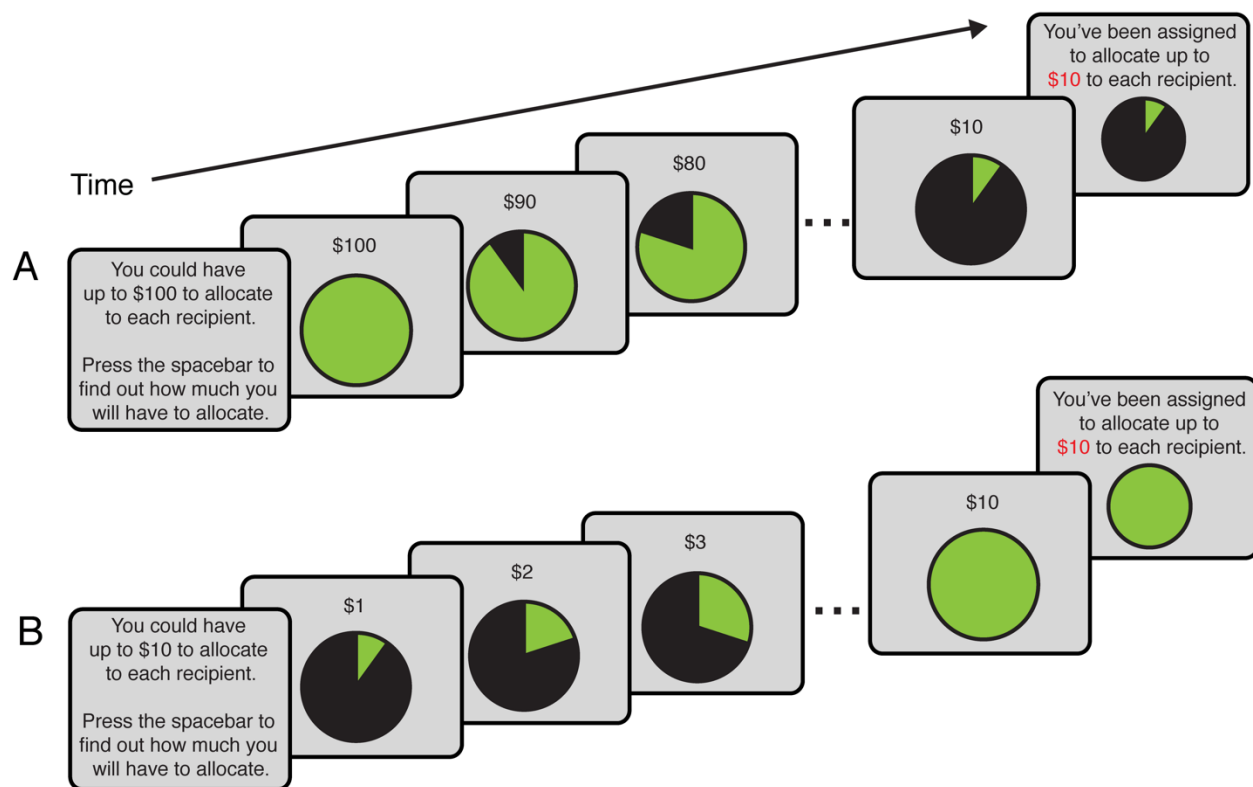


Figure S1. Scarcity manipulation. Participants believed they could have up to \$100 to allocate to each recipient in the scarcity condition (A) or up to \$10 to allocate to each recipient in the control condition (B). Every participant was ostensibly randomly chosen to allocate up to \$10 to allocate to each recipient – only the total *possible* amount changed between conditions.

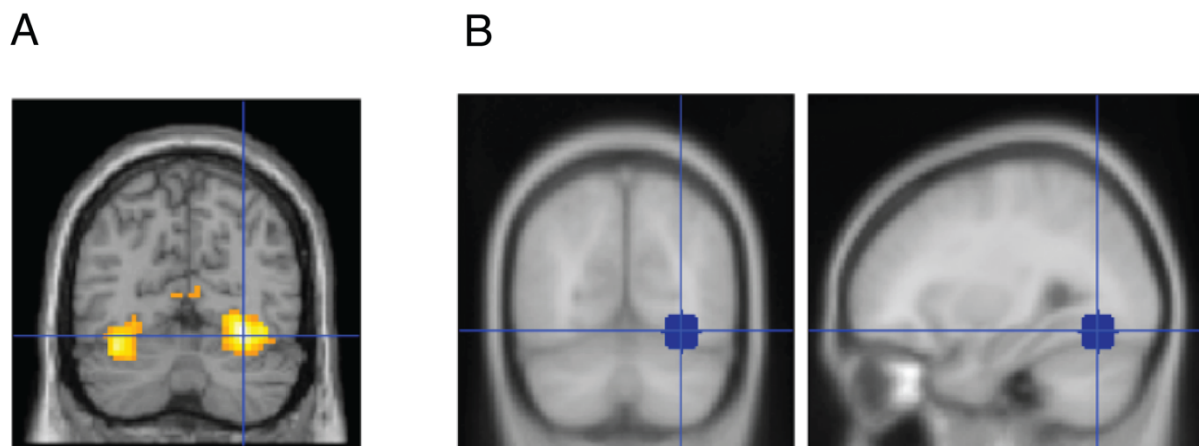


Figure S2. Fusiform ROI creation. We created face-sensitive fusiform regions of interest by (A) identifying the location of peak activity that was greater to faces than fixation (represented at $p < .00001$) and (B) drawing a 10 mm sphere around that point.

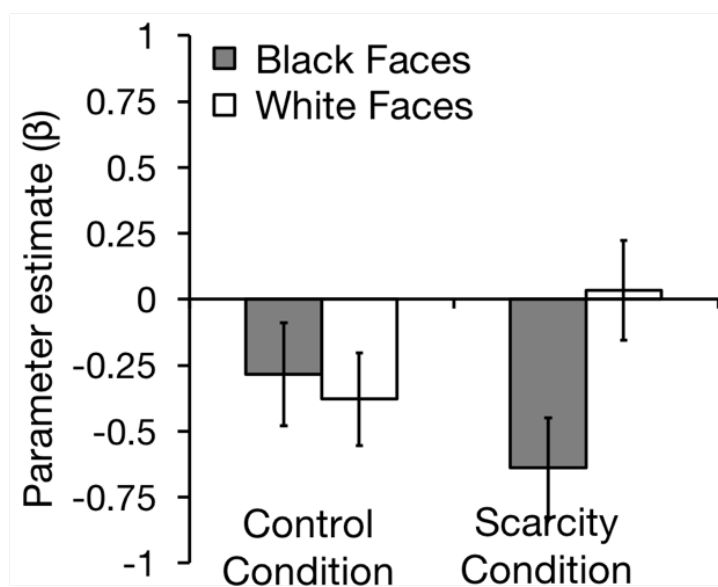


Figure S3. Scarcity effects on race in striatum ($N = 30$). Average parameter estimates of each trial type across in a significant 12 voxel striatum cluster, compared to fixation. Error bars represent within-subject +/- 1 SE.

Table S1. **Results of whole-brain Scarcity x Race analysis.**

Neural Activity					
Region	t-Value	MNI Coordinates			# Voxels
		x	y	z	
Black > White					
Calcarine/Lingual	3.96	-15	-54	9	49
Right Frontal Mid	4.45	33	30	42	22
Left Frontal Mid	3.80	-39	27	42	22
White > Black					
Fusiform/Lingual	4.27	36	-57	-3	34
Scarce > Control					
Control > Scarce					
Putamen/NAcc	3.50	18	12	0	21
Interaction					
Left Cingulum Mid	-4.20	-15	-21	48	39
Right Anterior Insula	-3.46	42	9	6	27
Left Postcentral	-3.74	-20	-36	48	23
Left Frontal Sup Medial	3.71	-9	69	24	25
Bilateral Caudate	3.75	3	18	0	23

Note. Thresholded at $p < .005$, $k > 20$

Table S2. Results of whole-brain PPI analysis with right Fusiform ROI as seed region.

<i>Neural Activity</i>					
Region	t-Value	MNI Coordinates			# Voxels
		x	y	z	
Black > White					
White > Black					
Left Hippocampus/Para	4.18	-15	-15	-6	99
Cingulum/Lingual/Calc.	3.99	-6	-39	18	187
Right Hippocampus/Para	3.93	12	-21	-12	120
Scarce > Control					
dACC/pre-SMA	3.67	-6	15	45	92
Control > Scarce					
Posterior Left Insula	3.88	-30	-9	15	88
Interaction					
Postcentral/Precentral	-4.63	-33	-33	51	186
Supp. Motor Area	-4.17	-6	24	45	110
Left Precentral	-3.85	-60	9	36	93
Left Mid Temporal	3.85	-45	-15	-18	136
Left Fusiform/Lingual	3.72	-24	-45	-15	88

Note. Thresholded at $p < .001$, $k > 86$

Table S3. Study 2 Debriefing Questions*Q1: What do you think the purpose of the experiment was?*

Pp	Response
1	I believe that the purpose of this experiment was to see how we naturally react to certain images and how different that is from what we actually put down for a certain answer. Many people change their answers to various things depending on how they might be viewed, but by seeing the brain as it's working it allows for a true understanding of the thought process of a person.
2	I believe the purpose of this experiment was to research and learn how different demographics (race, ethnicity, gender) affect how people make decisions in their everyday lives.
3	To see how looks or first impressions affect people's reaction to them
4	To see different facial features and their positive/negative impacts on subject's ideas surrounding them. This could differentiate between race, attractiveness, gender, and/or other facial features. Also to test ideas surrounding amounts of money.
5	Study the brain when making decisions based on ethnicity, race, and gender.
7	I think it was to assign a monetary value to a demographic (black vs white) by using black and white people making all sorts of different facial expressions (sad, angry, cheerful, etc.).
8	I believe that the purpose of this experiment was to see what features determine deservingness. This is what I was told, anyway, but I'm also starting to think that this experiment wanted to see how the allocation/perception of money would change if participants were told that they would be allocating large or small sums. I don't know if that makes any sense.
9	I think the purpose was to determine how much money I would give to certain demographics, ages, and beauty, to see if I was bias towards one race or age or attractive people.
10	To see how our impressions of people were affected based on just looks. How we determine deservingness by just one's attractiveness, race, gender, and expression.
11	The purpose of the experiment was to measure how deserving/trusting I found certain individuals to be, with the intention of giving (or not giving) those people money.
12	To study which brain areas are pertinent to decision-making vis-a-vis monetary allocation. I imagine that there was a racial component in the study as well -- how biased reactions look as opposed to non-bias perhaps.
13	Perhaps the purpose of the experiment was to see the regions of high brain activity during racial classification, retrieving biases, and/or performing basic reasoning to decide how much money to allocate per person.
14	to see if the race of an individual has any effect on whether or not they are deserving of a certain amount of money
15	To examine racial/gender/beauty prejudices and whether/how they affect money
16	To determine the arbitrary allocation of resources to a random set of faces
17	To examine how different parts of the brain are activated when making first impressions / To examine neural/psychological responses to race/gender/age differences / To examine neural/psychological responses to slight differences in expression / To examine

- how the brain is activated when asked to complete sociologically uncomfortable tasks (dealing with money allocation and deservedness)
- 18 To understand how race/ethnicity as well as gender affect how we perceive the worthiness of people, to test if physical factors of appearance play a part in how we perceive others.
 - 20 To determine how race and facial cues influence how a person judges another.
 - 22 to see how people reacted to certain races and ethnicities and facial expressions and based off of those pre-conceived biases how to give money accordingly
 - 24 I think the purpose of this experiment was to discover a correlation between how much money I allotted someone and their physical appearance. ie. gender, race expression etc
 - 25 to see how much a person's opinion affects their decision making when it comes to other people.
 - 26 To see how different areas of the brain work when allocating money to people.
 - 27 The purpose was to observe what facial features determined how much money was given to each person by the participant.
 - 28 To determine how much money people deserved based on their facial characteristics and ethnicity. For example, an upset and visibly worn minority would make me feel like they deserved more money.
 - 29 I think the purpose of the experiment was to study the response of the brain to the task of deciding deservingness via the process of allocation.
 - 30 To determine what thought processes were involved in judging worthiness.
 - 31 I think the purpose of this experiment was to determine what motivates people to decide someone is deserving of something or what (eye) cues/what people look at to determine how much someone else deserves.
 - 32 to see if there were innate differences in our allocation responses
 - 33 To determine the way in which people decide to trust others to make good use of money based on physical features.
 - 34 To see how we judge people's character, beliefs, etc. based solely upon their face. Some were less attractive, some had sores or pock marks, some were smiling, and you wanted to see how all these factors may affect my perception of them.
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*Q2: Did you feel you understood the tasks well? Did you know what to do?
Please name one thing, at minimum, that was confusing.*

Pp Response

- 1 I believe that the tasks were pretty clear and straight forward. My only issue with the experiment is that I felt like I had no true basis to judge how much money I should give to the people; I only had their skin color and facial expression. This is truly not enough in deciding how much money to give out because there is no foundation or reasoning to it.
- 2 Yes. There wasn't really anything that was confusing. I guess the most confusing part was that there wasn't any information given about the people that we were allocating money too, it was solely based on appearance.
- 3 It was very self-explanatory. If anything, I probably had the most trouble deciding where to put my arms once in the machine.

- 4 Yes, the instructions were very clear. At first I thought that we only had \$10 in total to allocate to a random number of people, but it made sense.
- 5 I did feel like I understood the tasks well and knew what to do. I think the most confusing part was having ten dollars twice, as I wasn't sure whether that was what was expected to happen from the computer. I think that is more situational though.
- 7 I didn't know that I would be randomly assigned a monetary value for the large and small blocks, it was a little confusing with the wheel but by the second time around I understood what was going on and that the value assigned to me was arbitrary.
- 8 I feel that I understood the task fairly well and knew what to do. Instructions were fairly clear. The only thing I found initially confusing was how the tasks themselves were to work, but that was cleared up pretty quickly.
- 9 I understood the task well, just allot a certain amount of money to each person. Before it started I had to make sure that I was given the \$10 for each person, opposed to I only had \$10 to give total and it would have to add up to \$10 after everyone.
- 10 Yes, I felt like I understood them well. At first, I was slightly confused by which finger corresponded to which amount.
- 11 I feel like I understood the task pretty well. Personally, I wasn't sure why I was giving people money in the first place (for example, if they were homeless, in distress, emergency, going to buy something illegal..). Social background would have made it a little bit easier but I think I understand what the experimenter was trying to do.
- 12 I was not sure if there was a maximum amount overall that I could allocate. It was unclear whether I had to be conservative in my allocation or if I could just be generous according to my own criteria-based judgments.
- 13 The tasks were fairly easy to comprehend, no worries there. I knew what to do throughout. At first when I was handed the button controller, the buttons were labeled from greatest to least. During the experiment, however, the dollar amounts went from least to greatest. There was really only minor confusion during the instructions portion outside of the machine. Once inside, I couldn't see the buttons so it wasn't an issue.
- 14 Yes. The only confusing part was that I received \$10 for both my large and small amounts, but I understand that happened randomly.
- 15 I was a bit confused when it said I could have \$100 per person and then only had \$10
- 16 I feel like I understood the task; I had trouble understanding what the real-world version of this would be, whether it was money coming out of my pocket or money that would go to waste if I didn't allocate it, etc.
- 17 Yes, it was well explained. I was confused by the fact that I was allotted the same amount to give both times. I wonder if thinking that the \$10 dollars was a maximum and then being told the same number was a minimum changed how I perceived the task. I wasn't consciously sure if it did.
- 18 I think I understood everything. I know several faces came up more than once and that was a bit confusing because after a certain sequence of faces I found myself allocating them a different sum of money.
- 20 I think so. I felt pressured to make sure i was using all 5 keys and i often had to remind myself not to save the extremes for what i thought where the most extreme scenarios...
- 22 I felt like I understood the tasks well and I knew what to do. One thing that was confusing was how to consider allocating the amount of money to different types of faces.

- 24 Yes I understood the task well but I was unsure of how to create the parameters of how to allot the money. I tried different tactics in deciding what type of person gets no money and who gets the full amount of money.
- 25 yes, and yes. The most confusing thing to me was the click any key to pick what amount of money you're going to have part. I kept clicking my clicker but it always just landed on a number randomly, not when I would click a key.
- 26 I think I understood what I was supposed to do pretty well. The only thing I found kind of confusing was that I wasn't totally sure what I should be basing my decisions on since all I had to go on was a picture of each person.
- 27 Yes. Yes. Nothing.
- 28 The tasks were pretty straight forward, the only question that I felt was lingering or subjective was whether the I hypothetically had \$10 and had to determine how much I would give (which I assumed), or if hypothetically I was to dish out an amount out of \$10 that I didn't own to the subject I was being shown.
- 29 I feel that I understood the tasks well. One thing that was confusing was the scale that asked me to rate how limited I felt after the first and second blocks. I was unsure whether to refer to the numbers on the hand control or the numbers presented on the screen.
- 30 I felt like I understood everything fairly well. The fact that the first and second amount of money were the same was a bit confusing.
- 31 I felt like I understood the task well. I knew what to do. The only slightly confusing thing was how at first it was out of \$100 and then \$10, I am not sure what the difference was supposed to be or if it was supposed to have an impact.
- 32 yes. why was the amount \$10 for both parts?
- 33 I feel like I understood the task well. Although one thing that was confusing was that at it took me a minute to realize that, in the first block, I was giving 10\$ out of the 100\$ I had, whereas I thought I was just giving a bit of a random 10 dollars, but I understood in the end.
- 34 I understood the tasks well. I felt like I knew what to do. I wasn't sure what I was allocating the money for though. Was it a hypothetical reward for a task? A gesture of good will?
-

Q3: Did your approach to allocation change depending on which block you were in (larger or smaller amounts)?

Pp Response

- 1 My block stayed the same both times (\$10) so I approached both the same way.
- 2 In both the larger and smaller amounts, I was given the same amount of money. However, I do believe my approach in the larger amount differed slightly from the smaller amount, as I felt that I had lost a chance at allocating money.
- 3 My amount was the same for both blocks, so yes I approached it the same.
- 4 Yes, when in the larger amount I felt that I was more restricted money-wise at first and felt that I should give larger amounts.
- 5 Because I had the same value for both larger and smaller amounts, my approach to the allocation did not change much. However, I do remember at times thinking that if I had 100 dollars instead of 10 I would be more reluctant to give out the higher amounts of money.

- 7 It didn't for me because I was assigned \$10 for both the large and small blocks so it just seemed like a continuation.
- 8 I think that I saw the \$10 in the large sum block as a far less significant amount of money than the \$10 in the small sum block. I kind of feel as if I didn't change my method of allocation too significantly, though.
- 9 I was given \$10 for both the small and large amounts, however I believe my mindset did change. For the first \$10 I allotted money based on 1-10 my initial reaction. I rarely gave the full \$10, because I was waiting for someone to really wow me. For the second \$10 (larger amount) I used a do they need \$10 philosophy. If the person looked like they could use \$10, I would give it to them. Usually they fell under this category if they were young (they could use the money) or a parent (usually a mother) or sad. If the person seemed angry or gave me a bad vibe, I usually gave them \$5 or less. There were a few cases that I gave \$0, only I believe if they were a man that I thought didn't need the money, or if they gave me a REALLY bad vibe.
- 10 No because I received the same amount for both blocks (\$10)
- 11 Both of my blocks were the same amount of money (the most minimal amount: \$10). Because my amount was so low, I felt pretty limited in my funds and didn't really see how such a little amount of money could really help someone if they really needed the financial support.
- 12 Not by much -- the second block I had gotten more used to the task at hand.
- 13 No not really, because I was tasked with allocating \$10 for both the larger and smaller amount blocks.
- 14 No i had \$10 for both blocks
- 15 no, I had same \$10 both rounds
- 16 Both of my blocks were for the same amount of money.
- 17 I didn't think so. I had the same number both times.
- 18 Actually, both of my blocks involved the same exact sum, so there was no difference in my approach.
- 20 This is a bit hard to answer given that i had the same \$10 to allocate in each block. That said, as the blocks went on i think i was able to get outside of my own head when arbitrarily judging people and switch over from will they think im racist mode? to alright who gets what mode.
- 22 No because I had the same amount of money in each block
- 24 My block stayed the same both times. In both blocks I was asked to allocate 10 dollars.
- 25 My amounts were the same, so no.
- 26 Not really, but then again I had 10 dollars to allocate each time so there wasn't really any difference.
- 27 No
- 28 Not really because I had the same amount for each, but over time I became increasingly strict with how much I would give to people and the reasoning behind it.
- 29 Since I was given the same amount of money to allocate during both blocks (\$10), I don't think my approach changed much.
- 30 Not that I particularly noticed.
- 31 No.
- 32 no
- 33 Yes.
- 34 My approach did not change since the random amount was the same both times.
-

Q4: Did anything in the experiment strike you as strange? Confusing? Untrue?

Pp Response

- 1 Just the fact that we did not have much of a basis to use for our results.
- 2 No, I quite enjoyed the experiment.
- 3 I don't think there was enough difference in the appearance of the people, although I suppose that was probably the point. It made it hard to decide the amount to allocate though!
- 4 There was a point where I couldn't tell if I was seeing the same face throughout or if the two subjects just had similar features. When this happened I couldn't remember if I was changing my monetary amount and became worried that I was being inconsistent.
- 5 It was a bit strange that I had the same amount of money for both the smaller and larger block, but I didn't think that was intentional. I also wasn't sure if the people I was giving money to were real people or not, but otherwise nothing really caught my attention.
- 7 no
- 8 **I'm pretty sure that the dollar amounts weren't random and that the experimenter wanted to see how people would allocate the same amount of money under different pretenses.**
- 9 It struck me as strange that I usually had a pretty good idea of how much I wanted to give each person. I also found myself giving more money to black people, probably because I subconsciously attribute them to be poorer or in need.
- 10 **I found it strange and a bit confusing that I received the \$10 amount twice.**
- 11 Some of the poses felt staged. For example, two men and one woman were completely wide-eyed and looked as like they were high on cocaine, stimulated, or just plain neurotic. Also, I'm pretty sure the only races involved were blacks and whites. That was curious. I felt like I was being tested on how stereotypical I was, and how easily I would give to a black person versus a white person. Also, I felt like I was being shown women and men in separate series of photographs.
- 12 **The fact that both blocks allowed for the same amount of allocation -- 10\$. Also, what would have prevented me from giving everyone 10\$? I wasn't sure if the test was supposed to merit-based.**
- 13 Nothing out of the ordinary, confusing, or untrue.
- 14 nope.
- 15 did I see some faces multiple times??
- 16 The motivation behind it seemed odd. It didn't seem like I had a complete picture of what was happening, as far as where the money had been before.
- 17 Not specifically. My being in that sort of position of economic authority seemed unrealistic however. Or at the very least uncomfortable.
- 18 Having to judge the same face multiple times out of sequence was a bit confusing and strange, but I understand how that might be a research tactic.
- 20 It felt very arbitrary to assign values on faces alone. For some reason i thought I would be getting a bit more information to synthesize alongside the face
- 22 It just struck me that I was supposed to allocate money to people based solely off of their facial features and expressions.
- 24 No
- 25 Some of the pictures started to look like they had similar features after a while.. not sure if that was just me though.

- 26 The only thing I found strange was that I was choosing how much money to give people based solely on one picture of them.
- 27 **I got 10 dollars both times.**
- 28 There were, as I recalled, some distorted facial features that I thought were strange and made it a little more difficult to assess the emotional state of the person. Also, I felt there were many more unfortunate looking minorities than whites, I feel if there were more not-well-off white people they would have deserved more money.
- 29 It felt a little strange to me to have to decide and change how much money I gave to each person. I think in a normal situation, I would have given the same amount of money to each individual.
- 30 Judging how much to allocate to people based solely on pictures was rather odd.
- 31 No.
- 32 i thought i saw a few repeated faces
- 33 No.
- 34 I never saw someone that was exceptionally attractive. It was also a bit odd that all the faces were in black and white.

Q5: Do you think the experimenter wanted you to do anything specific in today's session? If so, what?

Pp Response

- 1 No.
- 2 They stressed the importance of making sure I used the full range of buttons, allocating different amounts.
- 3 The experimenter wanted me to allocate specific amounts of money to the photos I saw.
- 4 I think she wanted me to use all different monetary amount equally.
- 5 I think that she wanted me to fall asleep or begin to fall asleep during the last scan.
- 7 I think they wanted me to use all the buttons so that there was variety in my responses. I think they wanted to see if I would assign less money to african americans.
- 8 I imagine that the experimenter wanted me to be honest with my answers, does that count? I can't think of anything else.
- 9 I assume that the data they wanted was that I would give more money to one specific type of person, and I assume they wanted it to be black people.
- 10 Not particularly, I think it was more to just observe what effects our perceptions of people. I think expressions/race/attractiveness might be especially interesting to the experimenter.
- 11 Yes. I think the experimenter wanted me to choose to give money to those who I trusted, or found that if given to them, the money would be spent well. The experimenter probably assumed I would give more money to those I felt calm, safe, and familiar with. That was pretty much the case, but I found myself giving more to people not only whom I sympathized with, but also whom I pitied or felt the need to assist; that included people separate from my age, race, or gender.
- 12 Not to freak out in the MRI machine.
- 13 Allocate money along the spectrum, not just choosing one value in particular to expedite the experiment.
- 14 not anything specific other than just doing the experiment

- 15 just to choose from all across the increments, which I think I did, except I only gave out \$0 once
- 16 I think the experimenter wanted to study my reaction to stress. I think it's likely that there was some kind of measurement of my allocation of the money with regard to various demographics (gender, age, race, etc.), but I'm not convinced that was the primary goal of the exercise.
- 17 Not pick the same amount for everyone, despite my being inclined to just arbitrarily throw money at everyone. I don't like to consider people undeserving of anything, nor do I enjoy the fact that I am capable of that thought in the first place.
- 18 I don't think so.
- 20 nope.
- 22 Wanted to see if we had any inherent race biases perhaps
- 24 I think the experimenter wanted me to be consistent in my choices of allotting people money in terms of the parameter set up for myself.
- 25 no
- 26 I think the experimenter wanted me to choose how much money to give different people.
- 27 Maybe it was expected I would favor a specific demographic or show preference against certain demographics.
- 28 Do my best to determine how deserving people were of my money given a set amount.
- 29 The experimenter wanted me to vary the amounts of money I gave to each individual based on the photo of the individual. This felt a little strange; I think I would normally just give each person the same amount of money.
- 30 Look at pictures and press buttons?
- 31 Not really, just to press different buttons and not continue to allocate the same amount to everyone.
- 32 see how race gender or physical attractiveness can play a roll
- 33 Use the whole range of money available to me. Also, perhaps have some kind of correlation between some facial feature or physical feature and amount of money allocated.
- 34 Allocate more money to more attractive people and white people and allocate less to less attractive people and black people.

Q6: Is there anything relevant that we haven't asked about, but should know regarding what happened in the study or what you did today?

Pp Response

- 1 I don't believe so.
- 2 I believe that the request to allocate all of the amounts at some point slightly influenced my decisions.
- 3 No.
- 4 Nope.
- 5 The only thing is that a few times during the allocation of the larger block I would occasionally react as though I had 100 dollars instead of 10.
- 7 no
- 8 There's nothing that I can think of.
- 9 Nope.

- 10 Nope
- 11 Maybe the role of the participant, like why am I giving away money (ie: charity, I owe you favor). But that might taint the experiment because it would be another variable regarding who to give money to and how much money to give to that person.
- 12 No.
- 13 Nope.
- 14 nope.
- 15 i was in a good mood
- 16 I was falling asleep a little at the end (when the screensavers came up) and I twitched a little. It definitely didn't affect the block tasks, but it might've affected the final scan.
- 17 It was interesting how I became more comfortable with making arbitrary judgements as the experiment progressed. I became less concerned with whatever demonstrations of unconscious racism/misangyny I was making.
- 18 No, I don't think so.
- 20 was all good fun. thanks much!
- 22 no
- 24 No
- 25 no
- 26 Not that I can think of.
- 27 No
- 28 Not that I can think of
- 29 Nothing comes to mind.
- 30 Is this study related to race in some way?
- 31 No. All good!
- 32 no
- 33 No.
- 34 Nope. I think that covers just about everything

Note. Highlighted portions indicate mention of our manipulation. Bolded portions indicate potential suspicion at our manipulation.