SUPPLEMENTARY MATERIAL

Who sees what as fair?

Mapping individual differences in valuation of reciprocity, charity, and impartiality

Appendix: Vignettes

Participants received one version of each of the 24 vignettes in all studies; each condition -- *Reciprocity, Impartiality, Charity, Unspecified* -- was represented by 6 vignettes. Condition was varied in part C. Alterations in part D for *Unspecified* condition are indicated in brackets.

VIGNETTE 1
(A) Sasha is a manager at a large factory. She is in charge of scheduling shifts for all the managers to complete safety trainings.
(B) Today Sasha has to assigns shifts, and she knows afternoon shifts are always preferred to morning shifts.
(C) *Reciprocity*: Sasha thinks about some managers who recently were a great help to her during the planning of the safety training curriculum.
Impartiality: Sasha thinks about which managers had the morning shifts last week, since she trades off shifts week to week.
Charity: Sasha thinks about a couple managers who were struggling to adjust to having newborns at home.
Unspecified: Sasha thinks about the managers and the available shifts. She opens the scheduling document and selects some managers' names.
(D) Sasha assigns those managers the better afternoon shifts.

VIGNETTE 2
(A) Dan referees street hockey games in a small city. He is responsible for making calls during the games.
(B) In one game, Dan is unsure whether a player has just committed a penalty.
(C) *Reciprocity*: Dan thinks about the player and how he had recently helped Dan clear out a large mess from his basement.
Impartiality: Dan thinks about the technical rules of the game and determines that the player's move was not illegal.
Charity: Dan thinks about the player and how he had just recently returned to hockey after recovering from a major car accident.
Unspecified: Dan thinks about the player's movements in relation to the other player, and the location of the hockey stick.
(D) Dan decides to not call out this penalty.

VIGNETTE 3
(A) Carol is asked to judge a contest at her company's annual picnic. The winner will receive a large gift certificate to a home improvement store.
(B) Carol watches her fellow employees participating in the contest.
(C) *Reciprocity*: One co-worker had recently put in a lot of overtime helping Carol complete a project at work.
Impartiality: One co-worker met all the judging criteria Carol had been given.
Charity: One co-worker was part of a department that had just been downsized and would soon be laid off.
Unspecified: One co-worker from the shipping department got on stage and performed an interesting juggling act.
(D) She decides to give this co-worker the highest score.

VIGNETTE 4

(A) Katie is part of a work group at school with two other students. The other students each have a different idea about the best way to present the project.
(B) They ask Katie to pick which idea she likes best. Katie gives it some thought.
(C) *Reciprocity*: One of the other students had recently picked Katie's idea for another part of the project.
Impartiality: One of the other students had presented an idea that fit all the requirements laid out in the syllabus.
Charity: One of the other students had just received her first chemotherapy treatment after being diagnosed with lymphoma.
Unspecified: She gets up to take a short break. She buys a soda from the vending machine and returns to the group.
(D) Katie decides to choose that student's idea [which student's idea to choose].

VIGNETTE 5
(A) Jon is the instructor of an engineering course at a small college. The students of the class have just finished designing an electric car for a competition.
(B) Jon must decide which student will be chosen to drive the car for the judges at the competition.
(C) *Reciprocity*: Jon thinks about the students. One student had recently helped Jon raise money for the project at a fundraiser outside of school.
Impartiality: Jon thinks about the rules of the competition. The driver of the car is required to have certain qualifications, and only one student qualifies.
Charity: Jon thinks about the students. One student had recently lost his home to a devastating tornado.
Unspecified: Jon thinks about the students and the dates of the competition. He pulls up the competition schedule on his computer.
(D) Jon chooses this [a] student to drive the car.

VIGNETTE 6
(A) Craig is part of a team of catering staff who pool all the tips they receive in an evening. All the employees have slightly different jobs and some serve more tables than others.
(B) Tonight, Craig must distribute the tips among them.
(C) *Reciprocity*: Craig thinks about a couple team members who had made his night a lot easier by running an extra errand that usually took Craig a long time to do.
Impartiality: Craig thinks about the catering company's rule that tips should be allocated based on how many tables employees served. Some employees served a lot of tables that evening.
Charity: Craig thinks about a couple of employees whose spouses were recently laid off from their jobs and who were on the verge of home foreclosure.
Unspecified: The evening had gone smoothly, and the client had written a check to pay for the catering at the end of the night. Craig thinks about some employees who worked that evening.
(D) He gives the largest portions of the tip money to them.

VIGNETTE 7
(A) Janice delivers a presentation at an important meeting at work. After she finishes, her co-workers praise the presentation and her achievements.
(B) Janice thinks about the help she received on the presentation.
(C) *Reciprocity*: One co-worker had recently located an important document that Janice had lost and which was critical for the presentation.
Impartiality: One co-worker had coordinated the meetings related to the presentation, and it was standard for the presenter to thank the coordinator.
Charity: One co-worker who helped had recently found out that her husband, a pilot in the Air Force, was being deployed for the third time.
Unspecified: She notices a few notes she had added to the end of her presentation. She returns to the podium.

(D) Janice acknowledges this [a] co-worker aloud.

VIGNETTE 8
(A) Jim coaches a soccer team at a local elementary school in a small city. There are twenty children on the team and they have gathered on the field for practice.
(B) Today, Jim is teaching the kids how to kick a goal.
(C) *Reciprocity*: Jim thinks about the children on the team. One child had recently come over and tutored Jim's own son in math.
Impartiality: Jim thinks about the soccer league's guideline that all the kids should be able to kick a goal. One child is not able to do it.
Charity: Jim thinks about the children on the team. One child's parents were recently evicted and were now facing homelessness.
Unspecified: Jim demonstrates kicking to the children and they practice. One child is very enthusiastic and won't stop kicking goals, even during the breaks.
(D) He lets this child have the most kicks.

VIGNETTE 9
(A) Brian is a landscaper who tends several lawns and gardens in the town of Fairfield. One day, he is short on time and can only make it to some of his clients.
(B) He looks at his client list and tries to figure out where he will go.
(C) *Reciprocity*: One of his clients had recently given him a valuable new referral for a large landscaping design job.
Impartiality: He checks the contracts for his clients and notices that the contract for one client specifically stipulates daily visits.
Charity: One of his clients recently had surgery and was unable to clear the leaves off his front stairs in order to safely use them.
Unspecified: He notices that several clients are about to receive large shipments of tulip bulbs. He checks the shipping status and looks at his map.
(D) Brian makes a plan to go to that [a] client.

VIGNETTE 10
(A) Naomi has a popular blog that she uses to discuss issues on children's education. Many people in several districts in her city regularly access the blog for tips.
(B) Naomi is writing a post on tutoring companies and wants to include links to tutors.
(C) *Reciprocity*: Naomi thinks about one tutoring company with several different locations, which recently sent Naomi a packet of information on math learning that she used to write a well-liked post.
Impartiality: Naomi has a rule to include links that are helpful for her readers all over the city. She figures out the locations of tutoring companies in different districts across the city.
Charity: Naomi thinks about her readers in one part of the city who recently lost funding for their in-school tutoring program. She figures out the locations of tutors that would be accessible and affordable for them.
Unspecified: Naomi spends the afternoon making phone calls, checking things online, and writing some notes in a document. She opens the blog program and begins to draft her post.
(D) Naomi includes these [some] links on her blog.

VIGNETTE 11
(A) Jessica recently graduated from college and moved to a major metropolitan area. Several acquaintances from college are in the city for a conference.
(B) Jessica has only enough room in her small apartment to provide one person with a place to stay.
(C) *Reciprocity*: She thinks about her acquaintances. One of them had recently helped Jessica at a different conference by connecting her with a contact who had a job opening.

Impartiality: She thinks about her acquaintances. She emails them all and lets them know the first person to reply can stay at her apartment. She receives a reply that evening.
Charity: She thinks about her acquaintances. One of them had recently been overwhelmed by very expensive student loan payments and was barely able to pay them.
Unspecified: She thinks about her acquaintances. They had all moved far from the college they attended in the middle of the country. Jessica receives a phone call.
(D) Jessica offers this [an] acquaintance a place to stay.

VIGNETTE 12
(A) Carla is a medical director at a dermatology clinic that employs several physicians. Recently, a new surgical technology had been demonstrated to the group.
(B) Several of the physicians come to Carla and request time off to obtain training in this new technique.
(C) *Reciprocity*: One of the physicians had recently covered several of Carla's duties when she took time off to attend a business development seminar in Germany.
Impartiality: It is a clinic policy that training leaves are granted based on the number of years physicians have been employed with the group. Only one had completed the required number of years.
Charity: One of the physicians had recently gone through a messy divorce after surviving a domestic assault, and her finances had been largely wiped out.
Unspecified: Carla consults the website of the company that trains physicians in the new surgical technique. She notes the dates and locations of the training sessions.
(D) Carla lets this [a] physician take time off for the training.

VIGNETTE 13
(A) Rick manages the purchasing department for an online retailer. Around the holidays, many companies and manufacturers send Rick holiday gifts.
(B) Today, Rick is deciding what to do with a basket full of chocolates.
(C) *Reciprocity*: One employee had recently come in on his day off to organize Rick's messy filing system.
Impartiality: He has a rule that a different employee will receive whatever gift was sent to Rick that day. He checks his list for the name of the next employee in line.
Charity: One employee's husband was a police officer who had recently been seriously injured in the line of duty.
Unspecified: He puts the basket on his desk. He checks his calendar and realizes he has a meeting in five minutes.
(D) Rick gives the chocolates to this [an] employee.

VIGNETTE 14
(A) Al teaches a creative writing course at a bookstore downtown. At the end of each course, he collects each student's favorite poem and prints it in his popular literary journal.
(B) Today he is laying out the poems. One must be placed on the "feature" page at the beginning.
(C) *Reciprocity*: One student had recently placed a new ad for Al's creative writing course at the coffee shop she owns.
Impartiality: Al had the students vote for their favorite out of all the students' poems. One poem received the majority of the votes.
Charity: One student had recently returned from Afghanistan, and was dealing with post-traumatic stress disorder.
Unspecified: Al opens his email program and downloads all the files that the students sent to him.
(D) Al puts this [a] student's poem in the featured spot.

VIGNETTE 15

(A) Gary is the driver of a large tour bus that takes hundreds of passengers to a casino. The huge crowd tends to get impatient as they wait to board the bus.
(B) Gary is about to begin the boarding process for the passengers.
(C) *Reciprocity*: Gary recognizes several passengers from a previous trip. They had won big payouts at the blackjack table at the casino, and had given Gary a large tip.
Impartiality: Passengers assigned to the seats in the back are to board first. Gary consults his passenger list and identifies those seated in the back rows.
Charity: Gary recognizes several passengers from a previous trip. They were a group of breast cancer survivors who had undergone difficult treatments.
Unspecified: Gary locates the passenger list for the trip. He checks the date and time that it was last updated. He determines how many empty seats would be available on the bus.
(D) Gary lets these passengers board the bus first [some passengers board the bus].

VIGNETTE 16
(A) Brenda works at a farm stand. There is a large selection of plants, fruits, and vegetables for sale.
(B) Today the farm stand is busy with many customers, and Brenda is ringing up sales at the counter.
(C) *Reciprocity*: Brenda recognizes a couple buying fruit and several potted plants. They had recently given her a discount at the hardware store that they own.
Impartiality: A couple is purchasing some fruit and several potted plants. They hand Brenda a coupon they had cut out of the paper for a discount.
Charity: Brenda recognizes a couple buying fruit and several potted plants. They had recently lost their son, who was away at college, in a terrible car accident.
Unspecified: A couple places several potted plants and a few pounds of fruits and vegetables on the counter. Brenda weighs the fruits and vegetables.
(D) Brenda gives them the three plants for the price of one.

VIGNETTE 17
(A) Jackson is a music teacher at an elementary school. The students are learning about percussion, and one instrument, the snare drum, is always the class favorite.
(B) Today Jackson is preparing his lesson plan for music class and must assign the instruments.
(C) *Reciprocity*: One student had stayed after class last week to help Jackson put away all the instruments in the storage closet, a task that usually takes him a long time to do.
Impartiality: Jackson trades off who gets the snare drum each class. He looks at the class roster and determines who was next in line for it.
Charity: One student was going through very difficult times at home and was barely able to stay engaged in the classroom.
Unspecified: Jackson pulls down the boxes of percussion instruments from the storage closets and makes sure all the pieces are there. He consults the class list.
(D) Jackson assigns the snare drum to this [a] student in his lesson plan.

VIGNETTE 18
(A) Mario is a cardiologist who runs a clinic for patients who are at risk of having a heart attack. A famous nutritionist is visiting Mario's clinic and offers to give two patients personalized diet advice.
(B) Mario must select which patients will receive the free consultations.
(C) *Reciprocity*: Two patients had recently helped Mario find an excellent assisted living facility for his mother.
Impartiality: The diet requires patients to have certain cholesterol levels and two patients fit the requirements.
Charity: Two patients had recently moved to the area because they were displaced from their home after flooding.
Unspecified: Mario notes the dates that the nutritionist is available to give the consultations on his calendar. He opens the patient records program.

(D) Mario invites these [some] patients to come in for the nutritionist's consultations.

VIGNETTE 19
(A) Max is a photographer who is expanding his business to include weddings. In order to build a wedding portfolio, he invites couples to submit their names to be considered for free wedding photography.
(B) Today he needs to choose who will receive the offer.
(C) *Reciprocity*: One couple had recently recommended Max to a new hotel who needed photography for their website.
Impartiality: Max enters all the couples' names into a computer program and has the program randomly select one couple.
Charity: The father of the bride-to-be in one couple had recently been killed in a sudden workplace accident.
Unspecified: Max begins to sort through the emails of the couples who contacted him. He notes their names and contact information.
(D) Max offers this [a] couple the free wedding photography services.

VIGNETTE 20
(A) Michelle is an intern at the White House. Several students from the high school she attended in her hometown are part of mentorship program for young people interested in a career in politics.
(B) Michelle is deciding which of these students to bring to an event at the White House.
(C) *Reciprocity*: One of the students had volunteered for several years in a row at an annual fundraiser that Michelle coordinated.
Impartiality: The program has a policy that seniors should be given priority to attend White House events. One student in the program is a senior.
Charity: One of the students in the program had been raised in foster care since the age of twelve after losing both of his parents in a shooting.
Unspecified: Michelle locates the phone number of the director of the mentorship program and gives her a call.
(D) Michelle decides to bring this student to the event [which student to bring to the event].

VIGNETTE 21
(A) Anne is the director of an emergency response team in a small town in New England. After a major storm, the town is in need of clean drinking water.
(B) A major shipment of water arrives in town and Anne must decide how to distribute it.
(C) *Reciprocity*: The company who sent the shipment has a large warehouse located in the center of Anne's town. A group of their employees was working to repair that warehouse.
Impartiality: Anne consults the list of emergency zones given to her by the response team. The team has organized the list in order to facilitate the fastest distribution. One zone is at the top of the list.
Charity: Some residents of the town had their homes completely destroyed in the storm. They were all displaced to a shelter without electricity or running water in one area of the town.
Unspecified: Anne helps the emergency response team unload the massive shipment into smaller delivery trucks and boats. She selects an emergency zone from her list.
(D) Anne sends the first portion of the shipment out to them.

VIGNETTE 22
(A) Sara collects book donations for a nonprofit organization in a major city. Thousands of children throughout the city receive free books through the program.
(B) Sara has received a huge donation of brand new books from a popular publisher, which she will send out today.

(C) *Reciprocity*: Sara thinks of a school in one borough that often sends teachers to help out with the organization's fundraisers.
Impartiality: Sara opens the master list of the schools that receive book donations. She notes which school is next in line for a donation.
Charity: Sara thinks of a school in one borough that was very poorly funded and was recently labeled 'underperforming' by the state.
Unspecified: Sara sorts the books by level of reading difficulty. She repackages the books, labels them, and prints the addresses of the recipients.
(D) Sara ships the donation out to them.

VIGNETTE 23
(A) Tania is an executive assistant for a design company in Los Angeles. One afternoon, she is asked to make several deliveries in the city.
(B) Tania is not sure she'll be able to get all the deliveries out in time. She begins to plan her route.
(C) *Reciprocity*: One delivery was for a designer in the lighting department who recently gave Tania an enthusiastic recommendation for a raise.
Impartiality: Tania plots out what appears to be the most direct route to all the delivery locations on her map. One location is just next door.
Charity: One delivery was for a designer whose son was in the hospital and who was clearly very stressed out at work.
Unspecified: Tania picks up the outgoing delivery packages and makes sure she can fit them all in her car. She types in an address on her GPS.
(D) Tania makes this delivery first.

VIGNETTE 24
(A) Bill is a fisherman who catches lobsters in the town of Rockport. When he gets back to shore one afternoon, there is a mixup with some orders.
(B) Bill notices there is an extra lot of 6 lobsters.
(C) *Reciprocity*: The owner of the business next door to the dock had recently given Bill his extra set of tickets to a baseball game.
Impartiality: Whenever there are extra lobsters, the fishermen give them to the manager who redistributes them to another order.
Charity: A family that lived close by was struggling through tough financial circumstances and Bill often saw the father returning from the food bank.
Unspecified: Bill looks over the order forms closely, checks the orders he already packed, and speaks to his co-worker.
(D) Bill packs up the lobsters and brings them over to him.

Study S1

Study S1: Method

To test the robustness of the relationship between ratings of the fairness of reciprocity and Machiavellianism, as well as their connections to allocation behavior, we ran these measures in an additional study (n=132) on Amazon Mechanical Turk. Participants rated the fairness vignettes and then completed the allocation task and Machiavellianism scale (order of presentation of allocation task and scale counterbalanced between subjects). The final sample included 119 individuals (M(SD)age=36.87(10.61); 63 female, 56 male). This study used the same exclusion criteria used in Study 2 reported in the main text.

Allocation Task Method. Participants received the following instructions for the allocation task.

> "In this task we ask you to imagine that you have been randomly paired with another person, whom we will refer to simply as the "Other." This other person is someone you do not know and that you will not knowingly meet in the future. Both you and the "Other" person will be making choices by choosing either the letter A, B, or C. Your own choices will produce points for both yourself and the "Other" person. Likewise, the other's choice will produce points for him/her and for you. Every point has value: the more points you receive, the better for you, and the more points the "Other" receives, the better for him/her.

> Here's an example of how this task works:
> A
> You get: 500
> Other gets: 100
>
> B
> You get: 500
> Other gets: 500
>
> C
> You get: 550
> Other gets: 300

In this example, if you choose A you would receive 500 points and the others would receive 100 points; if you chose B you would receive 500 points and the other 500, and if you chose C, you would receive 550 points and the other 300.

So, you see that your choice influences both the number of points you receive and the number of points the other receives. Before you begin making choices, please keep in mind that there are no right or wrong answers -- choose the option that you, for whatever reason, prefer most. Also, remember that the points have value: the more of them you accumulate the better for you. Likewise, from the "other's" point of view, the more points s/he accumulates, the better for him/her."

Study S1: Results

First, as in Studies 1-2, and prior work (Niemi, Wasserman & Young, in press), participants rated the allocators in the *impartiality* vignettes to be the most fair, significantly more so than allocators in the *charity*, and *reciprocity* vignettes, which also significantly differed from each other ($F(2, 236)=113.21$, $p<.001$; see means in Figure S1, error bars indicate standard deviation).

Fairness Ratings

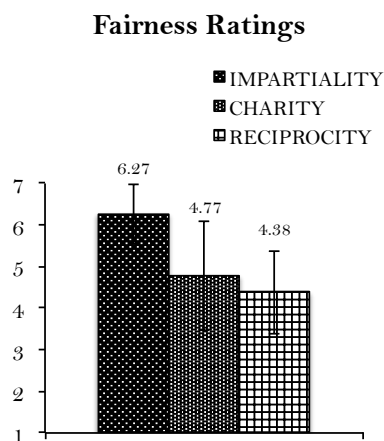⊠ IMPARTIALITY
⊞ CHARITY
⊡ RECIPROCITY

Figure S1. Fairness ratings for allocators in the impartiality, charity, reciprocity vignettes.

We found a correlation between Machiavellianism and reduced ratings of impartiality as "fair" (see Table S1 for correlations). This result is a conceptual replication of the link between Machiavellianism and higher rating of "person-based" fairness (reciprocity) in Studies 1-2. People higher in Machiavellianism may be less likely to endorse *impartiality* as "fair", as impartiality might strike them as prohibitively restrictive (Bereczkei, 2015).

We did not find a correlation between ratings of reciprocity as "fair" and higher Machiavellianism. But, reduced ratings of impartiality as "fair" and Machiavellianism also both correlated with more competitive choices in the allocation task. Machiavellianism also correlated with fewer prosocial choices in the allocation task. Finally, as in Studies 1-2, fairness ratings of reciprocity were more strongly correlated with fairness ratings of charity than with fairness ratings of impartiality ($p=.05$, based on results of a test of the difference between these dependent correlations, Lee & Preacher, 2013, September).

Table S1. Correlations among Machiavellianism, Allocation Behavior, Fairness of Reciprocity, Impartiality and Charity.

$n=119$	Mach	Pro	Ind	Comp	Reciprocity	Impartiality	Charity
Mach		-.20*	.15	.27**	-.01	-.18*	-.09
Pro			-.99	-.13	.18	.14	.07
Ind				-.04	-.13	-.07	-.06
Comp					.07	-.45***	-.06
Reciprocity						.20*	.39***
Impartiality							.09
Charity							

Note. Mach = Machiavellianism Scale Score. Pros= Prosocial (50-50 egalitarian) allocations, Ind= Individualistic (self-serving) allocations, Comp=Competitive allocations; Recip=Fairness ratings for reciprocity, Impart=Fairness ratings for Impartiality, Charity=Fairness ratings for charity.

References

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    Available from http://quantpsy.org.

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    distinct conceptions of fairness.