Paying for Kidneys? A Randomized Survey and Choice Experiment[†]

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We conducted a randomized survey with 2,666 US residents to study preferences for legalizing payments to kidney donors. We found strong polarization, with many participants supporting or opposing payments regardless of potential transplant gains. However, about 18 percent of respondents would switch to favoring payments for sufficiently large increases in transplants. Preferences for compensation have strong moral foundations; participants especially reject direct payments by patients, which they find would violate principles of fairness. We corroborate the interpretation of our findings with a choice experiment of a costly decision to donate money to a foundation that supports donor compensation. (JEL D63, D64, I11)

> *We need to understand better and engage more with the phenomenon of "repugnant transactions," which often serves as an important constraint on markets.* [...] *As economists, we have to understand folk ideas about what we can do in the market better than we do. They're a big issue. And that's not to say that economists are the ones who are necessarily right.*
> —Alvin Roth[1]

In 2018, more than 58,000 patients in the United States were added to the transplant waiting list; yet, only about 37,000 transplants were performed that year.

Currently, about 95,000 patients are waiting for a kidney, the most commonly transplanted organ (UNOS 2018). The average wait is around 4.5 years while receiving dialysis, and several thousand people die each year because they cannot find a donor. Recent estimates indicate that the kidney shortage has an economic cost of approximately \$3 billion annually.[2] There are many discussions in policy and academic circles about how to increase organ donations and transplants. In particular, there have been debates in the past few years about legalizing kidney donor compensation, which is currently illegal virtually everywhere (Becker and Elías 2007, Held et al. 2016, Satel 2006).[3]

Ethical concerns regarding the exploitation of participants, coercion, undue influence, and unfair allocation of organs are often indicated as main determinants of the opposition to paying donors.[4] A further worry is that compensation would violate human dignity and other sacred values.[5] Spital et al. (2002, p. 2004), for example, state: "We do not endorse as public policy the sale of the human body through prostitution of any sort, despite the purported benefits of such a sale for both the buyer and the seller" […] "we believe that a market system of organ donation fosters class distinctions (and exploitation), infringes on the inalienable values of life and liberty, and is therefore ethically unacceptable." These words characterize organ donor payments as "repugnant transactions," i.e., exchanges in which the parties want to engage but which third parties think should not be allowed (Roth 2007).

We designed a randomized survey and choice experiment to provide, to our knowledge, the first investigation into the nature of preferences of Americans toward paying organ donors. First, we explore the nature of these preferences and document their heterogeneity; in particular, we ask whether attitudes toward paying donors are influenced by the increase in transplants that such a system may generate, or whether instead they reflect deontological views or sacred values that are unaffected by considerations about kidney supply gains. Second, we assess how preferences depend on different institutional features according to which paid-donor systems may be organized. Finally, we explore the moral foundations of preferences for paid-donor systems. We then draw implications for policy and institutional design based on our findings.

Our sample consisted of 2,666 US residents recruited online through a survey firm. It was constructed to match the US population on sex, age, race, and education, and was fairly representative also on other sociodemographics. Our design included two main sources of experimental variation. First, we randomly assigned each respondent to one hypothetical paid-donor kidney procurement and allocation system, and asked them to consider it as an alternative to the current system.

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[2] This figure includes only direct monetary savings, whose estimate is of \$150,000–\$200,000 (mainly covered by Medicare) per patient. The total economic benefits of a kidney transplant reach over \$1 million per recipient if one adds the value of increased life expectancy and quality for the organ recipients (Held et al. 2016).

[3] Remuneration is illegal in all countries except in the Islamic Republic of Iran. In the United States, the 1984 National Organ Transplant Act (NOTA) prohibited the transfer of human organs for "valuable consideration," punishing violators with fines and prison time. Certain countries have introduced or are considering some types of incentives and mechanisms to enhance donations, such as allocation priority, kidney exchanges, and symbolic awards (Kessler and Roth 2012; Leider and Roth 2010; Niederle and Roth 2014; Roth, Sönmez, and Ünver 2004; Stoler et al. 2017).

[4] See Basu (2007), Halpern et al. (2010), Kerstein (2009), Radin (1996), Rippon (2012), Satz (2010). Ambuehl (2018) and Ambuehl, Niederle, and Roth (2015) provide experimental evidence of whether remuneration leads to undue influence.

[5] See Council of Europe (2015), Spital et al. (2002), Grant (2011), Sandel (2012), WHO (2004).

The features that characterized a system were the nature of compensation (cash or noncash), the amount of the payment ($30,000 or $100,000), and the identity of the payer (a public agency or the organ recipient). Each individual made multiple binary choices to indicate whether they would support the proposed system or if they would prefer to keep the current one, under five hypothesized increases in the number of transplants generated by the paid-donor system. This combination of between- and within-subject variation allowed us to characterize respondents' preferences toward transplant effects (number of kidneys procured) on the one hand, and institutional features of paid-donor procurement and allocation systems on the other hand.

The second source of variation is that we randomly assigned half of the participants within each system to express their moral judgments about both the current system and the paid-donor system at each hypothesized supply level. We considered six principles: autonomy of choice, undue influence, exploitation of the donor, fairness to the donor, fairness to the patient, and human dignity. In addition to allowing us to assess whether attitudes toward supply effects and design features of paid-donor systems have moral roots and which principles are more relevant, the random assignment of the morality assessment module meant we could also determine to what extent making ethical issues salient affects support for paying donors.

We find that on average across all conditions, 57 percent of respondents would support a paid-donor system in case of no transplant gains, and about 70 percent would favor compensation when the system is assumed to satisfy 100 percent of demand. The relationship between rate of support and transplant increases is roughly linear, with a 10 percentage point hypothesized increase in transplants leading to a 2–3 percentage point increase in support for compensating donors (similar across the different systems). The level of support, however, varies significantly depending on the payer's identity. Systems with payments from organ recipients receive support that is about 15 percentage points lower than systems where payment is from a public agency, at all levels of supply. In other words, although most respondents are in favor of *donors being paid*, there is strong opposition to *patients paying*. The nature and amount of compensation did not have an effect on support for compensating donors.

These aggregate responses are the results of wide heterogeneity in preferences. In particular, there is strong polarization, with about 21 percent of respondents opposing payment to donors regardless of its effects on transplants, and 46 percent in favor of paid-donor systems at all supply gains. About 18 percent of participants, however, display trade-off-sensitive attitudes, going from opposing to favoring payments if supply gains are sufficiently large.

Moral judgments vary widely in the population and correlate strongly with attitudes toward using prices in this context. A regression specification with the systems' features, hypothesized transplant gains, and sociodemographic variables on the right-hand side accounted for 5 percent of the variance in support for paying donors; this proportion rose to 30 percent when we included respondents' morality judgments. The identity of the payer and the type of payments particularly affected moral considerations, with payments by the organ recipient and in cash raising higher concerns than payments by a public agency and noncash compensation, respectively; the payment amount did not affect moral concerns. Respondents were especially worried about the fairness of the organ allocation; this was the main reason for opposition to systems with payments by the organ recipient. The patterns of support for paid-donor

systems were similar among respondents with and without the morality assessment module. Although we cannot exclude that other manipulations of salience (e.g., emotional appeals) may influence responses, this finding allays the concern that prompting respondents to think about morality would make those issues artificially salient.

Attitudes toward payments for kidney donors correlate with broader ethical views that we obtained using Graham et al.'s (2011) "moral foundations" assessment tools; individuals with more deontological beliefs are more likely to oppose payments regardless of transplant gains, whereas those who place high importance on consequentialist or utilitarian values are more likely to support legalization of payments.

Finally, we strengthened the findings and their interpretation by adding an incentivized choice module to the survey. We gave the respondents the opportunity to gain (or incur a cost) from having the researchers donate (or not) money to a foundation that supports expanding allowable payments to organ donors. Participants who opposed payments regardless of transplant gains in the stated-preferences survey were substantially less likely to donate to the pro-compensation foundation than other respondents (21.4 percent versus 42.9 percent, respectively), thereby showing a willingness to sacrifice monetary gain in order to express their opposition. Moreover, respondents who did not agree to donate to the pro-compensation foundation had stronger moral concerns toward paying donors in the stated preference survey than those who agreed to donate. We found opposite patterns of donations and concerns among those who donated to an anti-payment foundation.

Our study contributes to several literatures in economics. In recent years, numerous studies have focused on how fairness concerns, identity, religious beliefs, political ideology, dignity, and social status influence utility and decisions.[6] Calls for economists to consider ethical forces as guiding decisions have a long history (Smith 1822, Marshall 1890, Sen 1999). Shleifer (2004) discusses the effect of market forces on the diffusion of certain morally censurable behaviors. Bartling and Özdemir (2017); Bartling, Weber, and Yao (2015); Falk and Szech (2013, 2017); and Sutter et al. (2016) study whether market interactions erode morals or social responsibility. Evidence on whether individuals perceive trade-offs between moral beliefs and supply considerations in the case of repugnant transactions is, however, virtually nonexistent.

Other studies analyze whether economic returns affect an individual's decision to adopt a morally unacceptable behavior, such as lying or cheating on school tests.[7] These investigations focus on activities that are (plausibly) universally considered morally wrong, are illegal everywhere, and for which legalization is not considered a policy option. Our interest is in transactions that are morally contentious but that can be (and often are) contemplated as actual policies. Moreover, we focus on individuals' attitudes toward activities that others (not necessarily they themselves) undertake. This is, in principle, a decision process that differs from choosing between an illegal or universally unethical act and a private economic or social gain.

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[6] See, e.g., Akerlof and Kranton (2000); Bénabou and Tirole (2009, 2011); Bénabou, Ticchi, and Vindigni (2015); Bénabou, Falk, and Tirole (2018); Benjamin et al. (2012); Benjamin, Choi, and Fisher (2016); Bursztyn et al. (2015); Kuziemko et al. (2015).

[7] Among studies of preferences for truthfulness and economic incentives, see, e.g., Gibson, Tanner, and Wagner (2013) and Gneezy (2005). Jacob and Levitt (2003) and Martinelli et al. (2018) show that monetary rewards induce teachers and students to cheat on tests.

Many other morally controversial transactions have features similar to payments for organ donors; examples include gestational surrogacy, prostitution, abortion, eating meat from certain types of animals, and so on. Some of these activities are legal in certain countries but not in others, and opinions about their morality vary widely (Healy and Krawiec 2017, Satz 2010).

Finally, some of the concepts that influenced our research design come from outside of economics, in particular from studies in moral foundation theory and experimental ethics.[8] We see great value in connecting disciplines to enhance our understanding of the ethical constraints to economic transactions.

Section I outlines the framework that guided our empirical investigation. Section II describes the research design and the subject pool. We report our findings in Section III and discuss their implications for scholarship and policy in Section IV.

I. Motivating Framework

We describe a simple framework on which we base the design of the choice experiment. Consider an individual who evaluates an alternative way for society to organize the procurement and allocation of kidneys for transplantation, and compares her utility from such a policy to the utility she receives from the current system. The individual's utility depends on the number of transplants that the alternative system would generate, and on the institutional details that characterize the transaction. Setting the utility from the current system to zero, and assuming that the benefit an individual "voter" i derives from an alternative procurement and allocation system s has a linear form, we have $U_{is} = \Pi_{is} + \varrho_{is} Q_s$. The term Q_s represents the change in the number of transplants with respect to the current system, and Π_{is} represents the utility derived from the characteristics that define the procurement and allocation rules of a particular system as they differ from those of the current one. An individual supports the introduction of an alternative system s with system features Π_s and an expected kidney supply change Q_s if $U_{is} > 0$.

The coefficient ϱ_{is} (possibly individual- and system-specific) indicates how utility responds to increases in supply, and Π_{is} represents the reaction to specific characteristics of a system (regardless of transplant effects) relative to the current one. The agent will choose the alternative system irrespective of the size of the system's supply effects if both Π_{is} and ϱ_{is} are positive. If, instead, the individual reacts positively to transplant increases, but $\Pi_{is} < 0$, then she will oppose the alternative system regardless of the transplant gains if the absolute value of Π_{is} is large enough (indicating strong opposition to the institutional features of the alternative system); for moderate aversion to the design aspects of the alternative system (lower absolute values of Π_{is}), there will be a level T_1 of Q_s within the range of feasible increases that will make the voter support the alternative system for $Q_s > T_1$. An individual with $\Pi_{is} < 0$ and $\varrho_{is} < 0$ (e.g., because her disutility increases if more and more individuals engage in what she considers an undesirable transaction), would always

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[8] See, e.g., Birnbacher (1999); Bonnefon, Shariff, and Rahwan (2016); Doris and Stich (2005); Graham et al. (2013); Grant (2011); Haidt (2007); Knobe et al. (2012); Molewijk et al. (2004); Tanner, Medin, and Iliev (2008); Tetlock et al. (2000).

oppose the alternative system. Yet other agents with $\varrho_{is} < 0$ may have a preference for the system features of the alternative system ($\Pi_{is} > 0$), in which case they may support the system up to an increase in supply of T_2 but oppose it for any $Q_s > T_2$.

The next section provides the details of our randomized survey and choice experiment. We designed them to investigate the impact of system features (Π_s) and organ supply effects (Q_s), and we explore whether respondents' different reactions to the systems' features and transplant outcomes have roots in moral values.

II. Research Design and Subject Pool

A. *Experimental Design*

We designed a randomized survey and an incentivized choice experiment, and administered them online through a survey firm (Qualtrics) to a sample of 2,666 adult American respondents. The survey ran from November 15 to December 7, 2017.[9] Figure 1 outlines the flow of the experiment.

After informing participants that we would collect their (anonymous) opinions regarding alternative kidney procurement and distribution systems, we provided a description of several aspects related to the procurement and allocation of kidneys in the United States. The description outlined the nature of kidney failure; various types of kidney donations (i.e., deceased and living, directed and undirected donors); the living kidney donation process (including information regarding the surgery and the associated risks for and recovery of the donor); and the features of the current procurement and distribution system, including the size of the kidney shortage and the prohibition of compensation to donors by the 1984 National Organ Transplant Act (NOTA). This part of the survey was somewhat lengthy, but we wanted to ensure that all participants had the same initial information about the topic. Giving details about the context of interest is frequent and in fact encouraged in contingent valuation studies, for example in the valuation of natural resources, to enhance the reliability of respondents' expression of willingness to pay in the absence of market information (Carson 2012).

Assignment to Different Alternative Kidney Procurement and Allocation Systems.—We then randomly assigned participants to one of eight alternative procurement and allocation systems. Each system included compensation to donors and was a combination of the following attributes (Table 1 summarizes the features of each system):

(i) Nature of the payment: cash or noncash. In the cash systems, donors would receive a deposit to their bank account, whereas in the noncash systems, donors could choose between "tax credits, tuition vouchers, loan repayment, or contributions to a tax-free retirement account."

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[9] Survey materials (including texts and snapshots from the actual survey) are in the online Appendix.
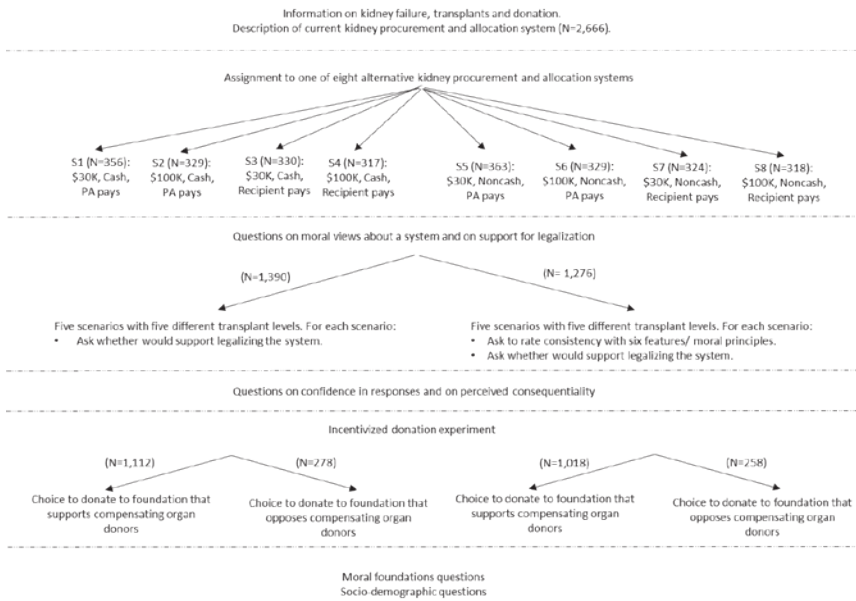
FIGURE 1. THE STRUCTURE AND FLOW OF THE EXPERIMENT

Notes: The figure reports the flow of the randomized survey and donation choice experiment. The dotted lines separate the various phases of the experiment. The solid arrows indicate random assignment to a condition. Numbers in parentheses represent sample sizes. The terms S1 through S8 indicate the eight systems, with a summary of their features (see also Table 1).

TABLE 1—CHARACTERISTICS OF THE KIDNEY PROCUREMENT AND ALLOCATION SYSTEMS RANDOMLY ASSIGNED TO STUDY PARTICIPANTS

	Nature of compensation	Amount	Payer	Number of respondents without morality assessment module	Number of respondents with morality assessment module
System 1	Cash	$30K	Public agency	188	168
System 2	Cash	$100K	Public agency	160	169
System 3	Cash	$30K	Patient	178	152
System 4	Cash	$100K	Patient	182	135
System 5	Noncash	$30K	Public agency	188	175
System 6	Noncash	$100K	Public agency	167	162
System 7	Noncash	$30K	Patient	165	159
System 8	Noncash	$100K	Patient	162	156

   (ii) Identity of the payer: the organ recipient or a public agency. In the "public agency pays" systems, donors would receive compensation from an agency coordinated by the US Department of Health and Human Services, and kidney allocation would follow priority rules based on medical urgency, blood and tissue match with the donor, time on the waiting list, age, and distance to the donor. In the "recipient pays" systems, donors would receive compensation directly from the recipient; we specified that a public agency, coordinated by the US Department of Health and Human Services, would regulate and oversee the process.

(iii) Size of the payment: $30,000 or $100,000.

The variation in the identity of the payer allows the determination of whether respondents object to payments per se, or if their aversion depends on who is paying and the resulting distributional consequences. Payments may be more ethically acceptable if they are not in the form of direct cash. Noncash forms of compensation could lessen the concern that vulnerable individuals might be induced to give away their kidney because they are in urgent need of cash (Satel 2006). However, in its strong form, opposition to payments appeals to deeper reasons (e.g., violation of human dignity) that make any form of payments unacceptable, irrespective of regulation, public intervention, and type of payment (Spital et al. 2002; Sandel 2012). Our design also allows discerning whether attitudes toward payments depend on the amount of compensation. One could argue that concerns such as exploitation of the participants would be less relevant if donors received a relatively large sum. Conversely, substantial sums may increase worries about undue influence (Ambuehl, Niederle, and Roth 2015). We chose the amount of $30,000 because it is in the middle of various proposals about payments. Becker and Elías (2007), for example, determine that payments between $15,000 and $30,000 ($18,000 to $36,000 in 2018 dollars) would eliminate the wait-list within a few years and, more recently, Held et al. (2016) consider a payment of $45,000. The larger amount, $100,000, is purposely out of the considered range on the high end, but still within the range of cost-effective amounts (Held et al. 2016).

Transplant Increases and Support for Alternative Systems.—After describing the alternative organ procurement system assigned to each respondent, we asked them to indicate whether they would support the proposed system or prefer to keep the current one. We did so under five scenarios, where each scenario asked the respondent to assume that the alternative system would result in a certain number of kidney transplants per year (and the corresponding fraction of the annual demand for kidneys), ranging from 19,000 (roughly the number of kidney transplants currently performed in the United States, or about 50 percent of the annual demand)[10] to 38,000 (corresponding to roughly 100 percent of the annual demand, according to estimates from Held et al. 2016). For each of the five choices, which we presented in ascending order in separate pages, we provided a table summarizing the characteristics of the alternative system, together with the features of the current system. We asked respondents to consider each of the five scenarios separately; that is, to take each level as the best available estimate of the number of kidney transplants performed annually. Choices were thus binary "referenda" between the alternative and current system (Vossler, Doyon, and Rondeau 2012). This within-subject component of the design lets us better characterize each individual's preferences.

Moral Views about Procurement and Allocation Systems.—Within each system, we further randomized participants (with 50 percent probability) to a module where we asked them to report their assessment of whether the system (i) benefits

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[10] According to UNOS, 17,878 kidney transplants were performed in 2015; 19,060 in 2016; and 19,851 in 2017. See https://unos.org/data/transplant-trends/.

or exploits the donors, (ii) respects or limits individual autonomy, (iii) allows individuals to make fully informed choices or exerts undue influence, (iv) is fair or unfair to the patients, (v) is fair or unfair to the donors, and (vi) whether it promotes or violates human dignity. In selecting these principles, we followed the literature in philosophy and bioethics.[11] Respondents could choose any integer number on a slider in the $[-10, +10]$ interval. To guide interpretation of the different numbers, we added seven verbal expressions above the sliders; we wrote, for example, "very unfair to donors" above the -10 mark, "neutral" above the 0 mark, and "very fair to donors" over the $+10$ mark (screenshots of the questions are in the online Appendix).

Participants provided their morality assessments prior to expressing support for the alternative system in each of the five kidney supply scenarios. We therefore can test whether the morality valuations are purely assessments of the institutional features of a system, or whether also the hypothesized transplant increases influenced the respondents' morality judgments. Before showing the subjects their assigned alternative system, we also asked those in the "morality assessment" subgroups to evaluate the current organ procurement and distribution system on the same six features and with the same scale. This gave us a reference set of assessments that would allow us to construct, for each individual, morality valuations of the alternative system relative to the current one. This part of the survey permitted us to determine to what extent ethical considerations explain participant support for the alternative systems. Moreover, including these questions only for a subset of respondents lets us assess whether making ethical issues more salient affects support for paid-donor systems or responses to supply gains.

Quality of Responses.—Because the law does not currently allow the policy options we consider, one cannot run an actual-choice experiment. We adopted several strategies to enhance the reliability of responses to the hypothetical scenarios we considered as well as the ensuing quality of our data.[12]

At the beginning of the survey, we asked respondents to commit to provide truthful answers. Prior research has shown that even simple prompts or soft commitments help to motivate participants to give complete and accurate responses (Cibelli 2017). We then introduced modules that would increase the perceived consequentiality of answers, measured whether participants perceived the topics of the survey as important, and collected their beliefs on whether their responses *should* or *would* have some impact on policy. Finally, we added an incentivized choice experiment. We describe these modules below.

Consequentiality: One critique of hypothetical surveys is that the opinions participants express might not represent their true preferences. To increase the perceived consequentiality of our survey, before prompting respondents to make their choices,

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[11] See Council of Europe (2015), Nuffield Council on Bioethics (1995), Radin (1996), Satz (2010), United States Task Force on Organ Transplantation (1986), WHO (2004).

[12] For other studies that rely on hypothetical scenarios, see, for example, Benjamin et al. (2014) on the analysis of subjective well-being and the relationship between happiness and choice; Kuziemko et al. (2015) on preferences for redistribution; Andreoni and Sprenger (2012) on time and risk preferences; and Kessler and Roth (2014) on priority rules and organ donor registration.

we informed them that we would send a letter to US congressional representatives and the secretary of health and human services reporting the distribution of the study respondents' preferences, and showed them an example of such a letter (see online Appendix Section A).[13] We then included questions to gather information about the key requirements that the literature on contingent valuation identifies to assess respondents' perceived consequentiality in hypothetical surveys (e.g., Carson and Groves 2007; Vossler, Doyon, and Rondeau 2012): first, individuals should regard the topic as important; second, respondents should perceive their responses as having a potential effect on actual policy choices.

Immediately following the set of five Yes-No choices regarding the alternative organ procurement system, we asked respondents to rate how strongly they felt about the choices they had just made. They could choose one of four answers: *"very confident"* (about my answers), *"somewhat confident," "somewhat unsure,"* or *"very unsure."* Then, to measure the extent to which participants cared about the topic and perceived their answers to have some chance of influencing policy, we asked them whether they believed that public authorities *should* take their answers into consideration, and whether they believed the authorities *would* take their answers into consideration (we randomized the order of these two questions). For these questions, the answers from which to choose were: *"not at all," "very little," "little," "somewhat,"* and *"very much."* Finally, we asked respondents to express their beliefs about the probability that Congress would pass legislation allowing various types of organ donor compensation. Taken together, these elements of our survey provide complementary ways to assess whether respondents considered the topic policy relevant, and whether they expected that the survey could have some impact on policy. We also assessed whether these beliefs affected the results of our analyses.

Social Influence: To assess whether participants were concerned about other people's opinions, we asked if their choices were affected by considerations about how others might be choosing. We also asked them what share of people in the United States they believed would favor various types of compensation to organ donors.[14] We used the responses to these questions to determine whether participants' responses were affected by the perceived popularity of payments to organ donors in the general population.

A Donation Experiment.—We also added an incentivized choice experiment to gauge revealed preferences for compensating organ donors. We offered all participants an extra $1 if they authorized us to make a $1 donation on their behalf to a foundation that supports the expansion of allowable forms of organ donor compensation. This gave respondents the opportunity to benefit financially from allowing us to donate to a pro-compensation organization or, conversely, to express a costly message of opposition to organ donor payments if they chose not to authorize us to make

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[13] Kuziemko et al. (2015) included respondents' willingness to send a letter to their congresspersons as an outcome variable in their study of attitudes toward redistribution.

[14] We included cash payments, reimbursement of lost wages and other expenses related to the donation process, health insurance for organ donors, and tax credits. Details are in the online Appendix.

the donation. This module thus introduces an element of incentive compatibility that we do not have in the hypothetical survey.[15] We study the consistency between stated preferences and donation behavior in two ways. First, we test whether the costly donation choices are consistent with respondents' stated support for paying donors in our survey experiment. Second, we assess the correlation between the donation choice and the moral views respondents expressed in the survey. Following Bursztyn, Egorov, and Fiorin (2017), we told participants they would be randomly assigned to one of two different organizations: one that favored payments to organ donors and one that opposed such payments. Doing so ensured that participants would not make inferences about the researchers' preferences.[16]

Moral Foundations.—The survey included a module that obtained information on participants' moral foundations. We used questions from Graham et al. (2011) to measure the importance each respondent placed on such values as equality, freedom, spirituality, justice, tradition, approval by others, compassion, giving, pleasure, purity, and pragmatism, and to assess whether a respondent held deontological or consequentialist preferences.[17] This information allows us to explore any correlation between participants' choices in our survey and their general moral views.

Sociodemographics.—The final part of the survey included sociodemographic questions (gender, age, income, education, religious beliefs, political orientation on social and economic matters, relationship status, and if the respondents had children) as well as questions on whether the respondents made donations or volunteered in the recent past, had received a blood transfusion or knew anyone who did, had received an organ transplant, were waiting for a transplant, or knew anyone in those conditions.

B. *Subject Pool*

Sociodemographic Characteristics of the Respondents.—Column 1 of Table 2 shows characteristics of the 2,666 survey participants. The survey firm constructed the sample to match the composition of the adult US population by gender, age, education, and ethnicity. The statistics in column 2 confirm that we achieved this goal; other features of the respondents (including marital status, employment, and income) are also fairly similar to those of the US population.[18]

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[15] Whereas the donation to a foundation allowed us to obtain an incentive-compatible indicator of participants' attitudes toward organ donor compensation, we could not use it to measure their attitudes toward specific features of possible organ donor compensation systems or whether and how their preferences depended on supply gains.

[16] Again following Bursztyn, Egorov, and Fiorin (2017), to maximize statistical power we assigned respondents to the pro-compensation organization (the American Transplant Foundation) with 80 percent probability, and to the organization opposing payments (the National Kidney Foundation) with 20 percent probability.

[17] We obtained the questions at this website: http://www.yourmorals.org/. Details are in online Appendix Section A.

[18] Online Appendix Table B1 reports estimates of regressions of binary indicators for a set of individual socioeconomic characteristics (gender, education, income, religion, volunteering, economic views, social policy views, and personal knowledge of someone who had a transplant) on binary indicators of the 16 experimental conditions. Of the 160 estimated coefficients, 5 are statistically significant at the 5 percent level, and 6 at the 10 percent level. The R^2 is smaller than 0.01 in all cases. The p-value of one F-test is 0.1 and another one is 0.06, whereas the others are far from values of conventional statistical significance.

TABLE 2—CHARACTERISTICS OF RESPONDENTS AND COMPARISON WITH AMERICAN
COMMUNITY SURVEY DATA (PERCENT)

	Qualtrics sample ($N = 2,666$) (1)	US population (2)
Women	50.8	51.4
Age 18–34	24.2	30.2
Age 35–54	36.4	33.5
Age 55+	39.5	36.3
White (non-Hispanic)	63.5	61.3
Black	12.6	13.3
Hispanic	14.1	17.8
Asian	6.3	5.7
Other race/ethnicity	3.4	1.9
Less than HS diploma	7.5	12.6
HS diploma/GED	24.4	27.7
Some college or Associate degree	30.3	31.0
Bachelor's degree	22.9	18.3
Graduate degree	14.8	10.5
Married	59.4	51.6
Employed	60.4	61.4
Income < $50,000	34.5	43.7
$50,000 ≤ Income < $100,000	35.6	30.0
Income ≥ 100,000	29.9	26.2

Notes: The table shows summary statistics from the Qualtrics sample in column 1 and corresponding statistics on the US population from various sources in column 2. The employment-population ratio is from the Bureau of Labor Statistics for November 2017 and it refers to individuals 16 and over. The other statistics are from the American Community Survey (ACS) for 2016 (https://www.census.gov/acs/www/data/data-tables-and-tools/subject-tables/). Marital status is for population 20 years and over; the remaining ACS statistics are for population 18 years and over.

Perceived Consequentiality and Confidence in One's Responses.—The vast majority of participants had a perception of consequentiality of their responses. About 80 percent said policymakers should *"somewhat"* or *"very much"* take their responses into account; only 3.3 percent said policymakers should not. Moreover, only about 13 percent stated that there was no chance that policymakers would consider their answers, and only between 3 percent and 4.2 percent attributed zero probability to the event that Congress would legalize some form of compensation to donors. Furthermore, 55.6 percent of respondents declared themselves *"very confident"* while 37.9 percent were *"somewhat confident"* about their answers.

III. Findings

A. *The Effect of Kidney Transplant Gains and System Characteristics on Support for Compensating Donors*

Figure 2 shows that the aggregate support for a paid-donor system increases with the level of assumed gains in transplants, in a roughly linear fashion and with a similar slope for all eight systems.[19] The level of support at each transplant

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[19] Because each respondent made multiple choices at each transplant level reported in ascending order, a possible concern is that the overall relationship between support rates and transplant gains may be due to some form of "coherent arbitrariness" (Ariely, Loewenstein, and Prelec 2003) rather than an independent response to
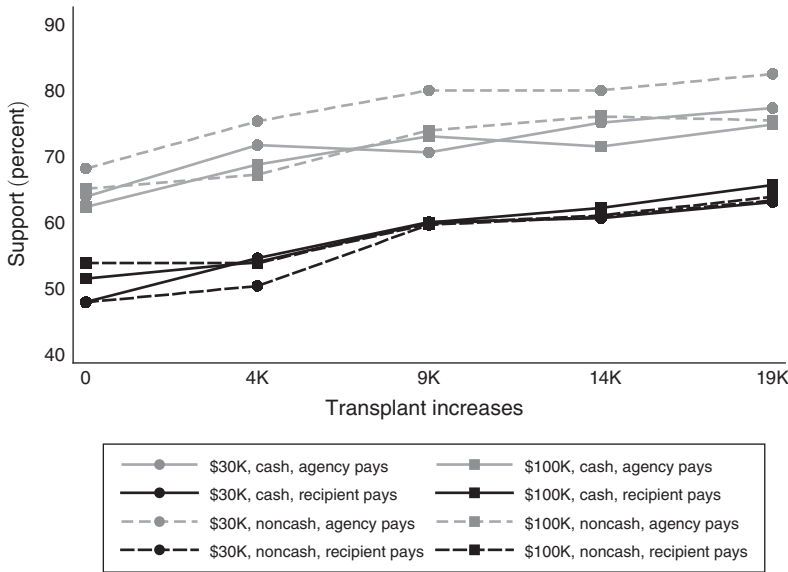
FIGURE 2. SUPPORT FOR ALTERNATIVE ORGAN PROCUREMENT SYSTEMS, BY LEVEL OF TRANSPLANT GAINS

Notes: The figure reports the percentage of participants assigned to each paid-donor system who stated that they would support the adoption of that system, at each level of hypothesized increase in transplants (K stands for thousands). The line styles distinguish the type of payment (cash versus noncash), the shape of the markers identifies the payment amount ($30,000 versus $100,000), and the line colors distinguish the identity of the payer (public agency versus transplant recipient).

gain, however, differs between systems. In particular, systems where a public agency compensates donors received significantly more acceptance than systems where the patient pays. Pooled together, systems with compensation from a public agency received support by 64 percent of respondents even for no transplant gains over the current system, and by 77 percent when the system was hypothesized to satisfy 100 percent of annual demand. Systems with payments from recipients, instead, went from support of 49 percent for no transplant gains to 63 percent at the highest gain.

Table 3 reports estimates from linear regression models. The outcome variable is an indicator equal to 100 if a respondent selected their assigned alternative system at a given transplant gain, and 0 otherwise; the right-hand-side variables include transplant gains, expressed in points over the current number of transplants per year,[20] and indicators for each system in some specifications, or binary indicators for the three key features of each system: the level of payment (1 for $100,000, 0 for $30,000), the type of payment (1 for cash, 0 for noncash), and the identity of

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each transplant-gain scenario. Attempts to create coherence across choices, instead of considering them independently, may lead to an overall slope that is greater or smaller than a case where individuals considered the five scenarios as fully independent. To address this concern, we ran an auxiliary survey on Amazon MTurk with a "between subjects" design whereby each respondent expressed their support or opposition at only one of the five kidney supply scenarios. The average transplant gains-support relationship is very similar to the one we found in our main experiment. We describe this exercise in online Appendix C1.

[20] We chose this specification because the relationship between support and supply level that informs the raw data (see Figure 2) is roughly linear. Regressions with binary indicators for different supply levels provided very similar results (see online Appendix Table B3).

Table 3—The Effect of Transplant Increases and Procedural Features
on Support for Paid-Donor Systems

Outcome variable:	Favor for alternative system (=100 if in favor, 0 if opposed)					
Regressors:	(1)	(2)	(3)	(4)	(5)	(6)
Transplant increase (percentage points)	0.256 (0.018)	0.256 (0.018)	0.234 (0.043)	0.232 (0.045)	0.255 (0.035)	0.258 (0.036)
$100K cash, public agency pays	−1.645 (2.964)		−1.148 (3.488)	0.571 (3.552)		
$30K cash, recipient pays	−14.461 (3.075)		−15.63 (3.551)	−14.893 (3.679)		
$100K cash, recipient pays	−13.086 (3.125)		−14.394 (3.601)	−14.312 (3.678)		
$30K noncash, public agency pays	5.462 (2.690)		4.885 (3.213)	4.110 (3.283)		
$100K noncash, public agency pays	−0.186 (2.915)		−0.127 (3.453)	−1.911 (3.545)		
$30K noncash, recipient pays	−15.327 (3.070)		−17.542 (3.563)	−19.034 (3.651)		
$100K noncash, recipient pays	−13.269 (3.172)		−12.855 (3.640)	−13.53 (3.725)		
Cash		−1.591 (1.535)			−1.483 (1.788)	0.332 (1.841)
Recipient pays		−15.026 (1.542)			−16.096 (1.794)	−16.227 (1.849)
$100K		−1.067 (1.538)			−0.172 (1.791)	0.058 (1.852)
$100K cash, public agency pays × transplant increase			−0.021 (0.066)	−0.057 (0.068)		
$30K cash, recipient pays × transplant increase			0.048 (0.069)	0.005 (0.072)		
$100K cash, recipient pays × transplant increase			0.054 (0.068)	0.072 (0.071)		
$30K noncash, public agency pays × transplant increase			0.024 (0.064)	0.031 (0.067)		
$100K noncash, public agency pays × transplant increase			−0.002 (0.068)	−0.016 (0.071)		
$30K noncash, recipient pays × transplant increase			0.092 (0.071)	0.128 (0.074)		
$100K noncash, recipient pays × transplant increase			−0.017 (0.067)	−0.002 (0.070)		
Cash × transplant increase					−0.004 (0.036)	−0.031 (0.037)
Recipient pays × transplant increase					0.044 (0.036)	0.061 (0.037)
$100K × transplant increase					−0.037 (0.036)	−0.042 (0.037)
Constant	64.87 (2.105)	66.659 (1.481)	65.4 (2.393)	63.846 (4.346)	67.203 (1.658)	64.531 (4.093)
Control variables				x		x
Observations	13,330	13,330	13,330	12,365	13,330	12,365
R^2	0.036	0.035	0.036	0.051	0.035	0.049

Notes: The table reports the coefficient estimates from linear regressions of the support for a system on the hypothesized supply increase and binary indicators for each of the eight systems or binary indicators for the three features of each system: the level of payment (1 for $100,000, 0 for $30,000), the type of payment (1 for cash, 0 for noncash), and the identity of the payer (1 for private payments from the recipient, 0 for payments from a public agency). Control variables (columns 4 and 6) include age, race, region, education, marital status, parental status, religion, employment status, income, volunteering, whether they or someone they know need/needed a transplant, and whether they or someone they know ever received a blood transfusion. The regressions include all 2,666 participants (193 individuals chose not to report information on their income and were thus excluded from the sample in columns 4 and 6). Standard errors, clustered at the respondent level, are in parentheses.

the payer (1 for private payments from the recipient, 0 for payments from a public agency). We also added interactions between these indicators and the measure of supply increases, and, in some specifications, control variables for sociodemographic characteristics of respondents.[21]

The estimates confirm that both system features and transplant effects have an impact on support for paid-donor systems. On average, a 10 percentage point increase in transplants leads to a 2.6 percentage point increase in support for a paid-donor system (columns 1 and 2). Systems with patient payments receive a support that is about 15–16 percentage points lower than systems with payments by a public agency. Thus, the effect of payer identity on the support for a system corresponds to the effect of about a $15/0.26 \approx 57$ percentage point increase in transplants.[22] The type and amount of payments, in contrast, have small and statistically insignificant effects on support. Finally, the systems' features do not affect the marginal response to supply increases (the coefficient estimates on the interaction terms are not statistically significant); thus, the parameter ϱ from the framework in Section I does not appear to be system-specific, making our simplified model with separate terms a plausible approximation.

B. Heterogeneous Responses to Transplant Increases: "Types" of Respondents

Figure 2 suggests a further pattern in the data. A sizable share of respondents expressed preference for a paid-donor system over the current one even when the alternative system would hypothetically yield no gains in the number of transplants. Moreover, between 20 percent and 40 percent of the respondents (depending on the specific system) supported the current no-payment system even when the hypothesized supply gains from the paid-donor system would cover the entire annual need for transplants. These findings are consistent with the presence of individuals with very different preferences, including some with strong opposition to payments regardless of the transplant effects, and others who, in contrast, supported compensation irrespective of any effects on transplants. The overall positive response to transplant effects derives from individuals who responded to hypothetical transplant gains by changing their position in favor or against donor compensation. Overall, we characterize five distinct "types" among the respondents (panel A of Figure 3). About 21 percent of participants expressed opposition to the paid-donor systems regardless of the hypothesized increase in transplants that the systems would yield (we refer to this group as "always opposed"). Conversely, 46 percent favored compensating donors at all transplant levels, including the case with no gains over the current

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[21] The addition of control variables to the regressions does not meaningfully affect any of the coefficient estimates of main interest. Note also that the coefficient estimate on the transplant gain variable would be the same with or without the introduction of individual fixed effects, because each individual was faced with the same set of five supply gains.

[22] In the survey, the description of systems with payments by the recipient did not articulate the allocation rules in case of imbalances between demand and supply, which may emerge because we assumed regulated prices. We did not clearly define the allocation details in the "recipient pays" systems in order to limit the possibility of confusion for respondents. In an ancillary survey on Amazon MTurk, we tested a different version of the "recipient pays" systems, with some details about the allocation rule. If anything, the support for the patient-pays system with details on the allocation system was a little lower than for the version described in the main survey. We interpret the results of this additional survey (described in online Appendix C2) as corroborating our interpretation that the identity of the payer is a major determinant of the support for a given procurement and allocation system.

Panel A. Overall

Panel B. Identity of payer
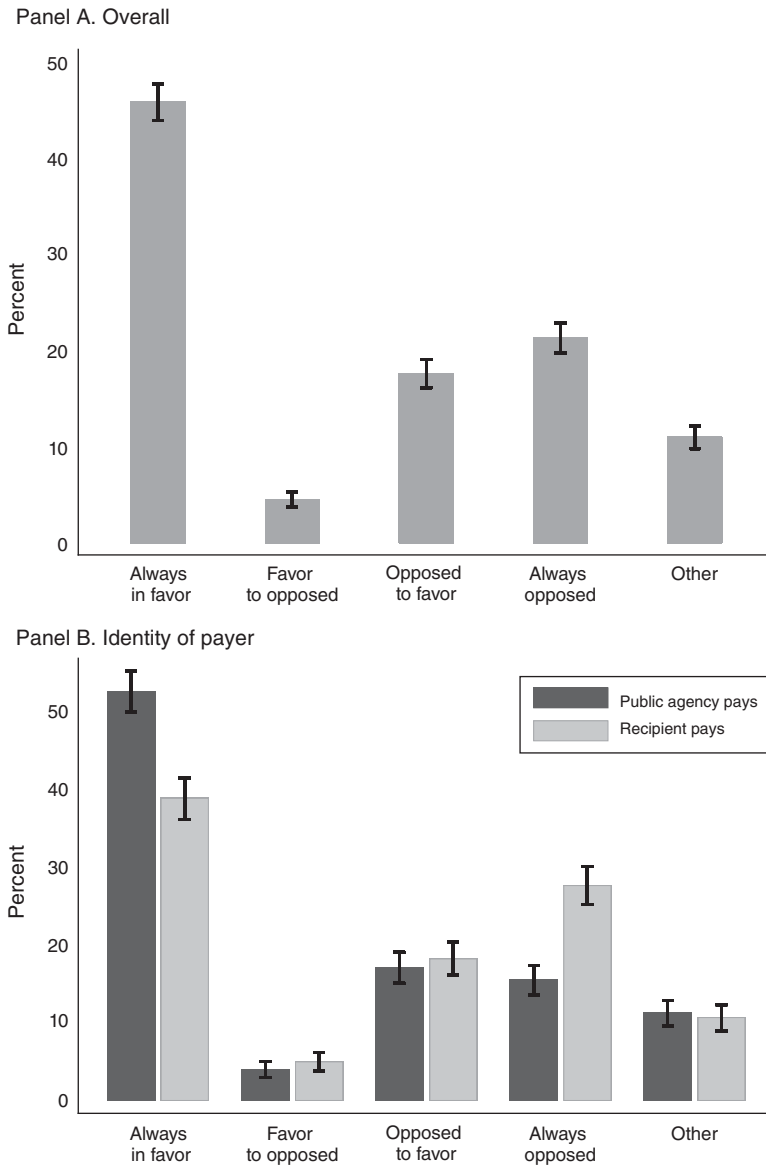
Figure 3. Respondent Types

Notes. Panel A reports the distribution (percentages) of the 2,666 respondents in terms of their patterns of support to kidney donor compensation at different hypothesized transplant gains (as defined in Section IIIB). The vertical bars and caps are 95 percent confidence intervals. *Always in favor* indicates the respondents who supported the alternative system in all five supply gains scenarios. The participants in the *Favor to opposed* groups are those who expressed support for an alternative system at no or low transplant gains, and opposition at higher gains. The category *Opposed to favor* indicates participants who expressed opposition to the alternative system at no or low gains, and shifted to supporting their assigned system at higher gains. *Always opposed* respondents are those who expressed opposition to the alternative system at all hypothesized transplant gains. The residual *Other* category includes individuals with patterns of choice that were not systematic with respect to transplant gains.

system ("always in favor").[23] About 18 percent of participants expressed opposition to payments in case of zero gains in transplants, but switched at some higher supply gains ("from opposed to in favor"). In contrast, a small subset of 4.5 percent of respondents showed the opposite pattern in their choices, supporting payments for no or small supply increases, but expressing opposition for higher supply levels ("from favor to opposed"). Finally, 11 percent of participants showed non-systematic patterns of choice with no correlation between support for the alternative system and kidney supply levels ("others").[24] Among the respondents who went from opposing to supporting the alternative system, almost 40 percent of them switched at the first opportunity (i.e., when the paid-donor system was assumed to increase transplants by 14 percentage points compared to the current system) whereas 15 percent of this subset became willing to support the paid-donor system only when it was hypothesized to cover the entire demand for kidney transplants.[25] The distribution of types differs across systems. We generally observe the largest proportions of "always opposed" and the lowest proportions of "always in favor" in systems where the patient pays (see panel B of Figure 3).[26]

C. *Moral Concerns for Paid-Donor Systems*

Our next step is to describe respondents' moral assessment of their assigned paid-donor system, limited to the 1,276 participants who (randomly) received the morality module. Figure 4 reports the distribution of ratings for each principle for all eight paid-donor systems and five kidney transplant levels combined, as well as the distribution of the ratings for the current system. Recall that positive numbers express consistency with a moral principle (e.g., autonomy of choice or respect of human dignity), whereas negative numbers indicate violation (e.g., coercion of choice or harm to human dignity). The main insight from Figure 4 is the wide variation in the morality assessments. The majority of ratings is on the positive side of the spectrum; for example, in most cases respondents saw at least some moderate benefit for donors, moderate respect of autonomy or dignity, and some fairness toward patients and donors. However, a substantial share of the ratings is on the negative side, thus indicating a perception of violation of certain moral principles. There is variation also for the current unpaid-donor system. For example, about 30 percent of respondents indicated that the current system at least moderately exploits donors (score of -1 or lower), and a similar share saw it as at least moderately unfair to patients. The

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[23] The absence of a relationship between support for a paid-donor system and supply gains for these two categories does not imply that these respondents do not place any value on supply gains; following the framework we laid out in Section I, these choice patterns are consistent with very strong views about the desirability of the procurement and allocation rules of a given paid-donor system.

[24] This behavior could derive from a lack of interest or attention, or an explicit desire to randomize (Agranov and Ortoleva 2017). The small share of this fifth group and some additional evidence we report below are consistent with these individuals not paying sufficient attention or not showing interest in the survey.

[25] Online Appendix Figure B1 shows details on the switchers separately for each of the eight paid-donor systems.

[26] Online Appendix Table B4 offers more details. The share of "always in favor" ranges from 35.5 percent ($30,000, cash, patient pays) to 54.3 percent ($30,000, noncash, public agency pays), that of "always opposed" varies from 10.2 percent ($30,000, noncash, public agency pays) to 29.6 percent ($100,000, noncash, patient pays), and the share of trade-off-sensitive, "from opposed to in favor" individuals goes from 14.8 percent ($100,000, noncash, patient pays) to 20.4 percent ($30,000, noncash, patient pays).
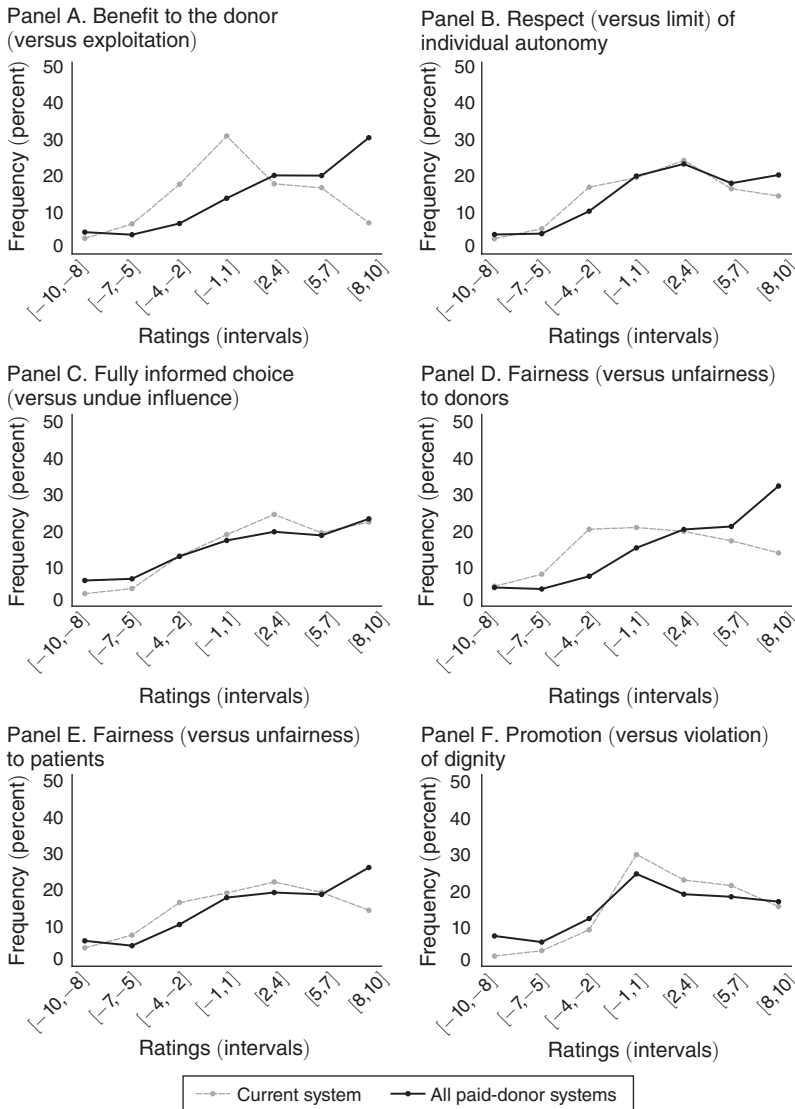
FIGURE 4. DISTRIBUTION OF ETHICAL PRINCIPLES SCORES

Notes: The graphs report the distribution of ratings for each of the six ethical principles that we asked the participants to consider. We aggregated all eight paid-donor systems and five kidney supply levels, and included the distribution of corresponding scores for the current system. We grouped the 21 possible scores (whole numbers from −10 to 10) into seven groups to make the curves smoother and the graphs more legible.

ratings of the six principles for the alternative systems are highly positively correlated (Pearson coefficients between 0.36 and 0.71); the same high correlation holds for the current system (coefficients between 0.35 and 0.56). However, the individual-level correlation between the paid-donor and current system ratings of a given principle is close to zero for all six features (coefficients between −0.06 and 0.15).[27]

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[27] The correlation table is in the online Appendix (Table B2).

TABLE 4—TRANSPLANT INCREASES, PROCEDURAL FEATURES, AND MORAL CONCERNS

Outcome variable:	Concerns for ex-ploitation	Concerns for lack of autonomous choice	Concerns for undue influence	Concerns for fairness to donors	Concerns for fairness to patients	Concerns for harm to human dignity	Principal component of moral concerns		
Regressors:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Transplant increase (percentage points)	−0.009 (0.004)	−0.018 (0.004)	−0.02 (0.005)	−0.011 (0.004)	−0.024 (0.005)	−0.019 (0.004)	−0.003 (0.001)	−0.003 (0.001)	−0.003 (0.001)
Cash	0.706 (0.373)	0.694 (0.355)	0.488 (0.389)	0.621 (0.393)	1.115 (0.370)	0.902 (0.356)	0.138 (0.053)	0.135 (0.054)	
Recipient pays	0.245 (0.374)	1.058 (0.356)	1.054 (0.391)	0.349 (0.394)	3.261 (0.374)	0.897 (0.358)	0.202 (0.053)	0.184 (0.054)	
$100K	−0.518 (0.371)	0.158 (0.354)	0.225 (0.389)	0.089 (0.391)	0.702 (0.369)	0.051 (0.355)	0.019 (0.052)	0.004 (0.055)	
Cash × transplant increase	0.005 (0.005)	0.004 (0.004)	0.005 (0.005)	0.012 (0.004)	−0.001 (0.005)	0.003 (0.004)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Recipient pays × transplant increase	0.006 (0.005)	0.004 (0.004)	0.01 (0.005)	0.009 (0.004)	−0.001 (0.005)	0.003 (0.004)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
$100K × transplant increase	0.000 (0.005)	0.000 (0.004)	0.000 (0.005)	−0.006 (0.004)	0.003 (0.005)	0.002 (0.004)	−0.000 (0.001)	−0.000 (0.001)	−0.000 (0.001)
Constant	−3.102 (0.357)	−1.389 (0.346)	0.091 (0.366)	−3.212 (0.376)	−2.996 (0.340)	0.459 (0.335)	−0.12 (0.050)	0.000 (0.126)	0.053 (0.008)
Control variables								x	
Individual fixed effects									x
Observations	6,380	6,380	6,380	6,380	6,380	6,380	6,380	5,990	6,380
R^2	0.006	0.012	0.011	0.006	0.062	0.012	0.020	0.052	0.938

Notes: The table reports coefficient estimates from linear regressions of moral concerns on the hypothesized supply increase, binary indicators for the three features of each system, the level of payment (1 for $100,000, 0 for $30,000), the type of payment (1 for cash, 0 for noncash), and the identity of the payer (1 for private payments from the recipient, 0 for payments from a public agency). Control variables (columns 8 and 9) include age, race, region, education, marital status, parental status, religion, employment status, income, volunteering, whether they or someone they know need/needed a transplant, and whether they or someone they know ever recieved a blood transfusion. The sample includes the 1,276 participants who recieved the ethical principles module (78 individuals chose not to report information on their income and were thus excluded from the sample in column 8). Standard errors, clustered at the repondent level, are in parentheses.

Table 4 and Figure 5 show the relationship between moral views and three factors: the transplant gains from the paid-donor system over the current system, the features of the alternative systems, and the respondent types we identified in Section IIIB. Our objective here is to begin to assess whether a person's overall reaction to a paid-donor system depends on moral concerns, and the extent to which respondents' different moral views relate to the transplants the system makes possible, the system's features (i.e., the process through which organs for transplantation are obtained and distributed), or both. For these analyses, we constructed relative measures of moral judgment by subtracting from each of the morality scores attributed by respondents to their assigned paid-donor system at each kidney supply level the corresponding rating that the subject gave the current system (respondents rated the current system only at the current kidney supply level), and multiplied this difference by −1. Thus, positive (negative) values of these relative moral concern scores indicate that a respondent considered their assigned paid-donor system at a given supply level as being less (more) consistent with a particular ethical principle than the current system. Principal component analysis identifies one single component
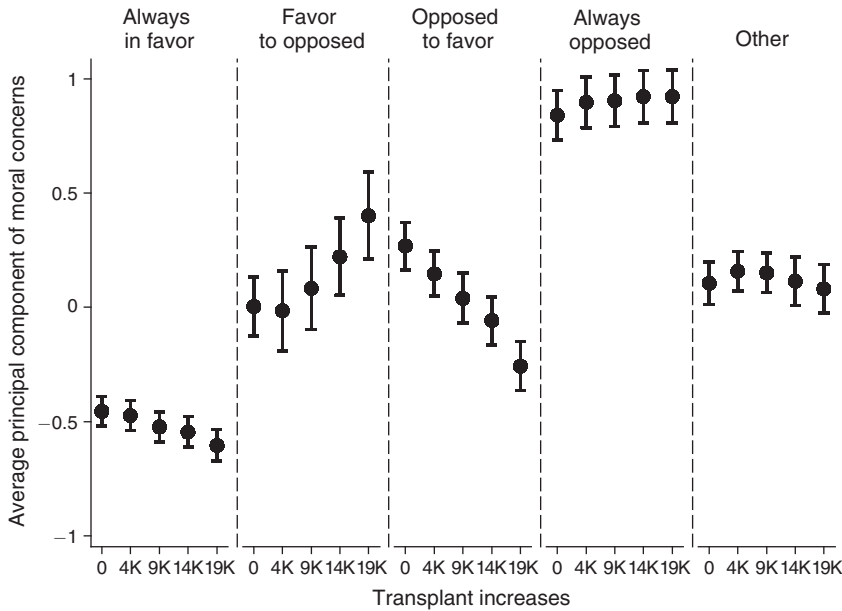
FIGURE 5. MORAL CONCERNS BY TYPE OF RESPONDENT AND TRANSPLANT INCREASES

Notes: Each group of five dots represents the average standardized principal component of the six rates of moral concerns across individuals of each "type" and for a given transplant increase (reported on the horizontal axes, where K stands for thousands). The vertical bars and caps are 95 percent confidence intervals. *Always in favor* indicates the respondents who supported the alternative system in all five supply gains scenarios. The participants in the *Favor to opposed* groups are those who expressed support for an alternative system at low transplant gains, and opposition at higher gains. The category *Opposed to favor* indicates participants who expressed opposition to the alternative system at low gains, and shifted to supporting their assigned system at higher gains. *Always opposed* respondents are those who expressed opposition to the alternative system at all hypothesized transplant gains. The residual *Other* category includes individuals with patterns of choice that were not systematic with respect to transplant gains.

that summarizes the six relative scores; in some of the analyses we therefore use the standardized estimate of this component.[28]

Table 4 reports estimates from regressions of the relative moral concerns for each of the six principles (and, in the last three columns, of their first principal component) on transplant increases (again in linear form and expressed as percentage points), as well as on indicators for the identity of the payer, and the type and amount of the payment. Overall, transplant effects have a small but statistically significant negative association with moral concerns. Cash payments increase all six moral concerns, although not significantly in the case of undue influence.[29] Payments by kidney recipients increase concerns that choices may not be fully voluntary, and that the system would be unfair to patients, cause undue influence, and

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[28] Online Appendix Figure B6 shows the scree plot from the principal component analysis. Because we retain only one component, we use the raw, unrotated version of its predicted values (divided by its standard deviation). The estimated component that we use in some of the analyses is strongly correlated with the average of the six relative scores (Pearson coefficient of 0.99).

[29] The four examples of noncash payments that we gave in the descriptions included loan repayment. A possible concern is that this could unduly put pressure on individuals who urgently need to repay a debt, making this type of compensation similar to cash. To test this, we conducted a survey on MTurk (see online Appendix C3 for details). We did not find any significant difference in support for or moral concerns toward a version of the noncash compensation system that included loan repayments and one that did not.

be disrespectful of human dignity. The large payment amount significantly increases concerns related to the system's fairness to kidney recipients. These concerns seem particularly strong with respect to all three features; payment by the recipient, cash format, and higher payment amount all strongly increase this concern. Adding control variables or individual fixed effects to the regressions (columns 8 and 9) did not change the main estimates of interest. The R^2 statistic in these regressions is generally small, suggesting that individual attitudes are especially relevant in determining moral views toward donor compensation rather than the features of a system per se.

However, moral judgments correlate strongly with respondents' support for paid-donor systems. In Figure 5, each group of five dots reports respondents' average value of the predicted principal component of moral judgments across the six scores at each level of hypothesized transplant increases, separately for each respondent's type. Moral concerns are very different for individuals who opposed payments regardless of kidneys procured, those who favored payments at all kidney supply levels, and individuals who increased or decreased their support with increasing supply gains. For participants with strong preferences (always in favor or against), moral views correlate only weakly with kidney supply levels, suggesting that these individuals favor or oppose a paid-donor system for reasons related to the system's features rather than transplant effects. For respondents who started out opposing the paid-donor system but switched to being in favor at higher supply levels, moral concerns are substantially lower at higher supply levels, whereas the opposite pattern characterizes participants who decreased their support for payments as the kidney supply increased.[30]

D. *The Association of Moral Concerns with Support for Paid-Donor Systems*

Tables 5 and 6 report estimates from linear regression models where, again, the outcome variable is an indicator for whether a respondent expressed support for their assigned paid-donor system at a given transplant gain.

In Table 5, the results shown in column 1 are from a regression that included as right-hand-side variables the transplant increases, the indicators for the level and type of payment, and the identity of the payer. In column 2, we added a binary indicator for whether respondents received the morality assessment module, and in column 3, we included interactions of the morality module indicator with the system's features and kidney supply effects. The estimates indicate that participants' responses to supply gains and to the systems' procedural features were broadly similar with and without the morality assessment module, although the estimated slope of the support-transplant gains relationship was lower for participants in the morality module condition (0.21 versus 0.31, and the difference was statistically significant at the 1 percent level). The limited effect of making morality considerations salient, coupled with their strong association with participants' support for

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[30] The averages in the graph aggregate the eight different systems. We report separate analyses for each different system in the online Appendix (Figure B3); the aggregate findings in Figure 5 here reproduce qualitatively for each system. We also performed analyses of variance for this summary measure of moral concerns, first by system and supply level, and then by system, supply level, and type of respondent. A model with the eight paid-donor systems and supply levels explains about 2.4 percent of the variance in moral concerns, with the systems' indicators accounting for 93 percent of the explained variation, and organ supply only 7 percent. Adding indicators for the respondent types increases the share of explained variance to 32 percent, with these types accounting for more than 92 percent of the explained variance.

TABLE 5—SALIENCE OF ETHICAL ISSUES AND SUPPORT FOR PAID-DONOR SYSTEMS

Outcome variable:	Favor for alternative system (=100 if in favor, 0 if opposed)			
Regressors:	(1)	(2)	(3)	(4)
Transplant increase (percentage points)	0.256	0.256	0.306	0.305
	(0.018)	(0.015)	(0.025)	(0.026)
Cash	−1.591	−1.670	−1.193	1.205
	(1.535)	(1.534)	(2.071)	(2.141)
Recipient pays	−15.026	−15.114	−15.862	−16.018
	(1.542)	(1.541)	(2.077)	(2.143)
$100K	−1.067	−1.047	−1.204	−1.520
	(1.538)	(1.536)	(2.074)	(2.156)
Morality module		3.911	−1.858	−1.016
		(1.538)	(2.954)	(3.029)
Transplant increase (percentage points) × morality module			−0.103	−0.109
			(0.036)	(0.037)
Cash × morality module			−0.955	−3.437
			(3.079)	(3.169)
Recipient pays × morality module			1.547	2.423
			(3.094)	(3.180)
$100K × morality module			0.362	1.263
			(3.082)	(3.168)
Constant	66.659	69.118	68.124	65.591
	(1.481)	(1.631)	(1.985)	(4.261)
Control variables				x
Observations	13,330	13,330	13,330	12,365
R^2	0.035	0.036	0.037	0.051

Notes: The table reports the coefficient estimates from linear regressions of the support for a system on the assumed transplant increase, binary indicators for the three features of each system, and a binary indicator for whether a respondent also received the moral principles module. The estimates in column 1 are the same as in column 2 of Table 3. The regressions include all 2,666 participants (193 individuals chose not to report information on their income and were thus excluded from the sample in column 4). Standard errors, clustered at the respondent level, are in parentheses.

paid-donor systems that we document below, suggests that moral considerations influence people's attitudes toward paying organ donors even in the absence of an explicit prompt.[31]

We next turn to analyzing the extent to which morality judgments account for the support for paid-donor systems. Because the moral concerns are subjective, we should interpret this evidence as correlational. However, it is reassuring that the estimates are not affected by the inclusion of control variables or individual fixed effects in the regressions we present.[32] Table 6 reports estimates limited to the sample of 1,276 participants who received the morality assessment module. Regressors include the relative moral concerns for each of the six principles (columns 2 through

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[31] Online Appendix Figure B2 shows that the subset of respondents who received the ethics assessment module was a few percentage points more likely to always oppose payments (23.4 percent versus 19.3 percent) and correspondingly less likely to be willing to switch from opposed to in favor (15.4 percent versus 19.6 percent). The fractions of always in favor of payments, instead, were similar among respondents with and without the morality assessment module (45.1 percent versus 46.4 percent).

[32] Online Appendix Table B5 reports the coefficient estimates on the control variables for the specifications in column 6 of Table 3 and columns 5, 7, and 9 of Table 6.

TABLE 6—TRANSPLANT INCREASES, MORAL CONSIDERATIONS, AND SUPPORT FOR PAID-DONOR SYSTEMS

Outcome variable:	Favor for alternative system (=100 if in favor, 0 if opposed)								
Regressors:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Transplant increase (percentage points)	0.202	0.141	0.141	0.155	0.138	0.131	0.144	0.143	0.141
	(0.026)	(0.024)	(0.024)	(0.024)	(0.025)	(0.027)	(0.025)	(0.027)	(0.049)
Cash	−2.148	1.956	0.676	1.548	1.845		1.656		2.318
	(2.279)	(1.862)	(2.072)	(1.879)	(1.911)		(1.922)		(2.320)
Recipient pays	−14.315	−8.054	−5.927	−10.377	−7.875		−8.416		−9.258
	(2.293)	(1.900)	(2.115)	(1.887)	(1.942)		(1.943)		(2.350)
$100K	−0.842	−0.082	1.191	−0.736	−0.486		−0.759		−0.917
	(2.280)	(1.855)	(2.064)	(1.868)	(1.898)		(1.906)		(2.308)
Cash × transplant increase									−0.029
									(0.050)
Recipient pays × transplant increase									0.034
									(0.051)
$100K × transplant increase									0.002
									(0.050)
Concerns for exploitation		−0.574		−0.571	−0.518	−0.404			
		(0.164)		(0.167)	(0.169)	(0.227)			
Concerns for lack of autonomous choice		−0.381		−0.519	−0.322	−0.305			
		(0.165)		(0.617)	(0.173)	(0.247)			
Concerns for undue influence		−0.802		−0.845	−0.805	−0.975			
		(0.162)		(0.164)	(0.168)	(0.239)			
Concerns for fairness to donors		−0.587		−0.734	−0.659	−0.846			
		(0.177)		(0.174)	(0.183)	(0.271)			
Concerns for fairness to patients		−0.905	−2.593		−0.865	−1.528			
		(0.144)	(0.115)		(0.153)	(0.236)			
Concerns for human dignity		−1.338		−1.655	−1.383	−0.914			
		(0.180)		(0.170)	(0.189)	(0.282)			
Principal component of moral concerns							−24.47	−27.031	−24.038
							(0.772)	(2.336)	(1.715)
Principal component of moral concerns × transplant increase									0.027
									(0.018)
Principal component of moral concerns × cash									2.176
									(1.505)
Principal component of moral concerns × recipient pays									−3.121
									(1.525)
Principal components of moral concerns × $100K									−1.673
									(1.491)
Constant	66.266	59.546	58.458	61.69	60.609	55.729	64.803	59.476	64.441
	(2.188)	(2.015)	(2.092)	(1.991)	(4.957)	(1.285)	(4.916)	(0.647)	(5.033)
Control variables					x		x		x
Individual fixed effects						x		x	
Observations	6,380	6,380	6,380	6,380	5,990	6,380	5,990	6,380	5,990
R^2	0.028	0.289	0.167	0.278	0.300	0.758	0.294	0.756	0.296

Notes: The table reports the coefficient estimates from linear regressions of the support for a system on the hypothesized supply increase, binary indicators for the three features of each system, and measures for the relative moral concerns for the assigned paid-donor system. The specifications for which estimates are in columns 7 through 9 include the principal component of the six principles among the regressors. Control variables include age, race, region, education, marital status, parental status, religion, employment status, income, volunteering, whether they or someone they know need/needed a transplant, and whether they or someone they know ever received a blood transfusion. The sample includes the 1,276 participants who received the ethical principles module (78 individuals chose not to report information on their income and were thus excluded from the sample in columns 5, 7, and 9). Standard errors, clustered at the respondent level, are in parentheses.

6), or their principal component (columns 7 through 9). In column 1 we report, for reference, estimates from the same specification as in column 1 of Table 5, limited to participants in the morality module condition. The inclusion of moral judgments among the covariates substantially raises the share of variance in the outcome for which the regressors account; the R^2 in column 2, for example, is 10 times as large as the R^2 in column 1. Transplant gains still show a significant, positive impact on the support for a paid-donor system; however, the marginal effect declines from about 0.20 to 0.14–0.15, suggesting that, in part, moral considerations drive responses to supply gains. There still is a large, negative impact of the identity of the payer on the support for a system, but the point estimate is, in absolute value, only about one-half as much as that from the specification without the moral views measures (compare column 2 with column 1). This is a strong indication that opposition to direct payments by kidney recipients, the strongest feature affecting individuals' choices, has moral foundations. In particular, the estimates show that respondents worry that a private payment system would be unfair to kidney recipients (compare columns 3 and 4 in particular), consistent with the findings on the determinants of moral concerns that we reported in Section IIID. In column 9, we also include interaction terms between pairs of the variables of interest. In this specification, we use the principal component of the relative moral concerns rather than the six judgments separately. As in the estimates reported in Table 5, the coefficient estimates on the interaction between transplant gains and system features is not statistically significant. Greater moral concerns, instead, correlate with a further significant reduction in support for systems where the payment is from the organ recipient.

We use the estimates in column 9 to compare the overall effect of kidney supply and moral concerns, with the caveat that, because of the (ever-slight) correlation between supply gains and moral views, these comparisons should be taken with caution. For example, an increase of 0.22 standard deviations in the predicted value of the principal component of moral concerns (i.e., roughly the average difference in the principal component between systems with payments by an agency and payments by the recipient) reduces overall support for paying donors by about $0.22 \times 24 = 5.28$ percentage points; in absolute terms, one could obtain an equivalent increase in support for paying donors with a supply gain of $5.28/0.14 =$ roughly 38 percentage points.

E. *Attitudes toward Payments for Kidney Donors and Broader Moral Views*

In this section, we explore whether attitudes toward paid-donor systems correlate with respondents' "moral foundations," which we assessed through a set of modules from Graham et al. (2011). We also study the relationship between preferences for compensation and political and religious beliefs.

Table 7 reports the percentages of respondents with certain sociodemographic characteristics and beliefs, according to the preference "types" defined in Section IIIB. We consider gender, educational attainment, income level, religious and political views, as well as whether respondents reported knowing anyone who had or needs a transplant. Attitudes toward religion could arguably relate to an individual's ethical views; moreover, recent studies showed a link between religious views and economic decisions and outcomes (Bénabou, Ticchi, and Vindigni 2015; Benjamin, Choi, and

TABLE 7—CHARACTERISTICS OF RESPONDENTS BY PAID-DONOR SYSTEM PREFERENCE TYPES

Individual characteristic:	Paid-donor system preference types			
	Always in favor	From favor to opposed	From opposed to favor	Always opposed
Woman (percent)	50.20	51.26	52.14	52.20
	(1.43)	(4.60)	(2.31)	(2.10)
College+ (percent)	35.79	34.45	42.31	37.21
	(1.37)	(4.37)	(2.29)	(2.03)
Annual household income > $75K (percent)	47.00	36.61	50.93	48.55
	(1.48)	(4.57)	(2.41)	(2.20)
Atheist/agnostic (percent)	13.19	6.72	14.53	14.11
	(0.97)	(2.31)	(1.63)	(1.46)
Knows someone who needs/had a transplant (percent)	20.64	22.69	25.00	18.34
	(1.16)	(3.86)	(2.00)	(1.63)
Conservative on economic issues (percent)	34.23	32.77	33.76	42.86
	(1.36)	(4.32)	(2.19)	(2.08)
Conservative on social issues (percent)	29.89	25.21	29.06	36.33
	(1.31)	(4.00)	(2.10)	(2.02)
Liberal on economic issues (percent)	21.29	20.17	17.09	14.64
	(1.17)	(3.69)	(1.74)	(1.49)
Liberal on social issues (percent)	26.13	24.37	28.63	22.05
	(1.26)	(3.95)	(2.09)	(1.74)
Moral foundations—principal component 1 (average)	0.161	−0.083	−0.019	−0.242
	(0.03)	(0.10)	(0.04)	(0.05)
Moral foundations—principal component 2 (average)	−0.107	0.089	0.087	0.146
	(0.03)	(0.09)	(0.05)	(0.04)

Notes: The table reports the percentages of sociodemographic characteristics, political and religious beliefs, and the average of the two principal components of the moral foundations scores (giving, compassion, tradition, freedom, pleasure, and pragmatism) and response to the moral dilemma vignette, separately for the four types of preferences toward paid-donor system defined in Section IVB (we excluded the *Other* type from the table). The sample has 2,375 observations (one per respondent) for all variables except income (180 individuals chose not to report information on their income). Standard errors are in parentheses.

Fisher 2016). The analyses by education, income, and gender follow the literature on social preferences (Croson and Gneezy 2009, Kuziemko et al. 2015). Finally, broader views on social issues or economic policy issues may relate to opinions about the use of prices in the context of organ donation.

Turning to more direct measures of moral views, we also consider a subset of the moral foundation questions we asked participants (we posed a larger set of questions to obfuscate the issues in which we were especially interested). We focus on compassion, freedom, pleasure, pragmatism, giving, and tradition. Individuals who value compassion highly may be more responsive to increases in transplants and, as such, be less opposed to paying donors. This attitude may also characterize respondents for whom freedom is a particularly important value, as well as those who hold values such as pleasure and pragmatism (arguably related to utilitarian views) in high regard. To the extent that people who value tradition also have a preference for the status quo, one might expect these individuals to be more opposed to payments. Finally, a high consideration of giving as a moral value may lead to disapproval of payments if giving is interpreted as a gratuitous activity, but also to supporting payments if they lead to more giving. Following Graham et al. (2011), we used a 9-point scale (from −1 = "opposed to my values," to 7 = "of supreme importance")

for questions about moral values in the survey. Next, we used a vignette (from the same source as the moral foundations questions) describing a moral dilemma to measure whether a respondent was characterized by deontological or consequential-ist/utilitarian preferences. The dilemma consisted of a decision whether to open a hatch in a sunken submarine that would result in certain death for one crew member but save the rest of the crew. An opinion that one should not sacrifice a life even if doing so would save several other lives indicates a deontological view, whereas a choice to sacrifice that single person indicates a more consequentialist or utilitarian view. In our context, respondents who gave a deontological answer to the vignette would more likely be opposed to payments to organ donors regardless of how many additional lives might be saved as a result.[33]

For the ratings on these six principles and the response to the vignette, we per-formed principal component analyses and identified two main components. The ratings of the six moral values have a high loading on the first factor, whereas the response to the vignette has a high loading on the second. In general, therefore, we can attribute stronger consequentialist or utilitarian views to the respondents who scored high on the first factor and stronger deontological views to those who scored high on the second factor.[34]

We find some significant differences in the distribution of types according to some sociodemographics.[35] For example, participants who are socially or econom-ically conservative are more frequent among those who always oppose payments. Those who are liberal on social issues are more frequent among those who go from opposing to supporting compensation at higher kidney supply levels, and those who are liberal on economic issues are more frequent among subjects who always favor compensation. However, the largest differences between types of respondents are in the scores of the two principal components of moral values. With regard to the first factor, the one that best summarizes consequentialist or utilitarian values, respon-dents who are opposed to donor compensation regardless of the transplant effects have a much lower score than those who are always in favor (a difference of 0.40 standard deviations) or switch to being in favor for high-enough transplant gains (a difference of 0.22 standard deviations).

We obtain additional evidence that attitudes toward legalizing payments, and the role that supply gains play in determining these attitudes, correlate with broader moral views from the analysis of the time respondents took to complete our sur-vey, and from an analysis of the open comments respondents left at the end of the survey. Previous research shows that deontological judgments tend to be faster than consequentialist ones (Sunstein 2014). Consistent with this idea, we find that respondents who oppose payments regardless of supply gains were indeed faster

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[33] In online Appendix Section A we report details on the moral foundations questions and the vignette.

[34] Also in this case we rely on the raw, unrotated predicted values (divided by their standard deviations), which seem to represent the correlation structure between the six principles and the response to the vignette more closely. Because the response to the vignette is on a different scale (binary as opposed to integers between −1 and 7), an alternative approach would be to derive the single principal component for the six moral values, and to keep the binary response to the vignette question as a separate variable. With this alternative specification, the results are very similar to the ones presented here.

[35] We reported the distribution of types after excluding the fifth group ("others"). Because of the lack of discern-ible patterns in the choices of these participants, we concluded that it was not insightful to consider their underlying moral views for the purposes of the analysis here.

in completing the survey than the other two largest groups or types of respondents (those always in favor and those who went from opposing to supporting compensation for higher supply gains). We find comparable differences when we focus on the time participants took to respond to the "submarine" vignette, with individuals always opposed to payments completing this part of the survey faster, and individuals recommending to not that the action what would result in the death of the character (an answer that the literature interprets as deontological) having a shorter response time. We report graphical representations of these findings in the online Appendix (Figures B4 and B5).

In the online Appendix (Tables B6 and B7), we also report an analysis of the open comments that survey participants could leave at the end of the questions. Of the 2,666 survey respondents, 330 left some comment. We asked three independent raters to classify this feedback into a set of categories, including expressions of opposition to paying donors (73 comments), support for donor payments (32), appreciation for the topic of the survey (111 comments), personal experience (15 comments), or other (99 comments).[36] We find that the nature of the comments correlates strongly with participants' attitudes toward paid-donor systems; respondents who left a comment expressing opposition to organ donor payments are much less likely to favor compensating donors and less likely to donate money to the pro-compensation foundation. Moreover, participants who were always opposed to organ donor payments were 5.9 percentage points more likely to leave a comment (corresponding to a 51 percent increase over the baseline). This is consistent with the idea that individuals who feel more strongly about an issue are also likely to be more vocal. In contrast, the features of the paid-donor system assigned to respondents and the prompt to think about ethical issues do not correlate with the likelihood that respondents left a comment.

As a whole, our evidence strongly suggests that respondents' attitudes toward paying organ donors per our measurement relate to a broad set of moral values as commonly assessed in moral and social psychology.

F. *Donation Choices*

We now turn to looking at respondents' choices in our incentivized donation experiment. The regression estimates in Table 8 reinforce our interpretation of the findings from the analysis above. In particular, there is strong consistency in preferences and their moral foundations as they emerged in the survey responses and in the donation choice experiment.

Columns 1 through 3 report linear regression estimates of the choice to donate to the American Transplant Foundation (ATF), which the respondents knew supported an expansion of allowable forms of organ donor compensation. The only regressor in column 1 (in addition to the constant) is the indicator for whether a given respondent received the morality assessment module; with this analysis, we assess whether

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[36] 591 respondents wrote something in the space provided; however, 236 wrote, "no comment" (or equivalent expressions) and 29 typed some random characters. We found strong concordance across the three raters' classifications and used a majority rule (i.e., two out of three) to assign comments to categories. We assigned comments without a majority to the "other comments" category.

Table 8—Donation Behavior

Outcome variable:	Donation to ATF			Donation to NKF		
Regressors:	(1)	(2)	(3)	(4)	(5)	(6)
Morality module	−0.026			0.035		
	(0.022)			(0.045)		
Principal component of moral concerns (over all transplant levels)		−0.128			0.102	
		(0.016)			(0.035)	
Always in favor			0.199			0.039
			(0.038)			(0.068)
From favor to opposed			0.064			0.308
			(0.062)			(0.129)
From opposed to favor			0.095			0.043
			(0.044)			(0.079)
Always opposed			−0.221			0.110
			(0.040)			(0.078)
Constant	0.517	0.486	0.414	0.284	0.360	0.254
	(0.058)	(0.078)	(0.061)	(0.119)	(0.162)	(1.124)
Observations	1,974	955	1,974	499	243	499
R^2	0.035	0.115	0.134	0.065	0.163	0.078

Notes: The table reports the estimates from linear regressions of the choice to donate to the American Transplant Foundation (ATF) or the National Kidney Foundation (NKF), expressed as binary (0-1) indicators, on the following covariates: an indicator for whether a respondent received the morality judgments module (columns 1 and 4); a summary measure of the moral concerns participants expressed toward the paid-donor system (average principal component of six moral concerns over all transplant gain levels per individual, columns 2 and 5); and indicators for a respondent "type" as expressed by their pattern of stated support for different transplant gains (columns 3 and 6). Control variables include the features of the paid-donor systems (indicators for payment by recipient, cash payment, and \$100,000 payments) as well as the respondents' age, race, region, education, marital status, parental status, religion, employment status, income, volunteering, whether they or someone they know need/needed a transplant, and whether they or someone they know ever received a blood transfusion. The regressions include one observation per respondent.

the salience to moral considerations per se affected donation behavior. In column 2, we limit the sample to 955 participants who received the moral principles modules and were assigned to the ATF donation opportunity, and regress the indicator for donation to ATF on the average principal components of the six relative moral concerns (and the control variables). In this case, we test whether the moral views that respondents expressed in the survey also explain their willingness to donate to a pro-compensation organization. Finally, in column 3 we report donation frequencies by respondent type to study whether overall patterns of support for paying donors translate into costly donation choices.

The exposure to questions about the morality of a paid-donor system does not correlate with the decision to donate to the ATF. Moreover, respondents who donated to the ATF had much lower moral concerns toward compensating donors in the hypothetical survey than those who made the costly choice not to donate. Finally, respondents who opposed payments in all five hypothetical transplant gain scenarios were also less than half as likely to donate to the ATF as those who expressed favor of payments at all five scenarios, and those who expressed favor for higher hypothetical transplant gains.

Columns 4 through 6 of Table 8 report estimates of the same analyses as the ones in the first three columns of the table, but limited to the 536 respondents who had the option to donate to the organization that opposes the legalization of compensation to

organ donors (the National Kidney Foundation, or NKF). In this case, respondents with higher moral concerns toward compensation were more likely to donate.[37]

These findings are consistent with those from our survey, and with the interpretation we gave to those results. We see this as an important corroboration for our stated preferences survey.

G. *Robustness: Controlling for Perceived Consequentiality and Beliefs about the Popularity of Donor Payments*

The issue of incentive compatibility was one concern we discussed in Section IIA and addressed with the above-mentioned monetary donation experiment. We also considered two other topics related to the reliability and interpretation of the data: the perceived consequentiality of the responses, and the potential role of social pressure, conformity, and "strategic" responses. Online Appendix Table B9 reports regression estimates from the same model as in column 9 of Table 6, where we either add to the regressors our measures of participants' perceived relevance of the topic, confidence in their answers, and consequentiality of the survey, or limit the sample to respondents who perceived the topic as important, were confident of their responses, and attributed at least some level of consequentiality to the survey. Finally, the estimates in online Appendix Table B10 are from regressions where we added controls for the participants' beliefs about the popularity of payments to organ donors in the US population, and the importance that individuals attributed to social recognition as a guiding value in their lives. The inclusion of these variables (or the restriction of the sample according to how the respondents answered these questions) does not generally change any of the main estimates of interest, including the responsiveness to transplant changes and the effect of the systems' procedural features.[38]

IV. Discussion

Studying the nature of aversion or support to certain market transactions, and in particular the role that cultural and moral beliefs play in determining these views, provides insights about how to address policy-relevant problems and whether policymakers can alleviate ethical concerns via institutional design. Although proper policy design can address some ethical concerns, other worries, such as the perception that a transaction violates human dignity per se, are less amenable to being addressed. A population's strong feelings about them may explain why societies

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[37] Online Appendix Table B8 reports regressions where we also added measures of respondents' "moral foundations." Individuals with deontological preferences are significantly less likely to donate to ATF, whereas holding stronger consequentialist or utilitarian values (in particular for freedom) positively correlates with the decision to donate to ATF. A high value for compassion correlates positively with the decision to donate to either foundation.

[38] However, there were some "level" effects: respondents who found the topic more important, were more confident in their responses, and perceived the survey as more consequential, reported that some of their responses were affected by how they believed others would respond. Those who reported a high value for social recognition saw the legalization of donor compensation more favorably; those who believed that less than 50 percent of Americans would approve of different forms of organ donor compensation were more likely to be against compensation at any level of transplant gains.

prohibit certain activities even if these prohibitions reduce individuals' freedom and private welfare.

This project studied the nature of preferences of Americans toward paying organ donors, and our analysis offers four main insights.

First, we find strong polarization of attitudes: large proportions of respondents are either in favor of or against paying organ donors, irrespective of the size of hypothesized kidney supply gains. We also confirmed the evidence from stated preferences with the analysis of incentive-compatible monetary donation choices. Strong polarization of opinions is a recurring feature in topics that are ethically contentious.[39]

The second main insight is that moral considerations correlate strongly with these opposing views. The broad similarity of (stated and revealed) preferences about paying organ donors among subjects who were prompted to express their moral views and those who were not indicates that concerns about the potential violation of ethical principles were prominent in respondents' minds, regardless of the salience that we (the researchers) gave to them. Our interpretation is consistent with the additional finding that attitudes and ethical views regarding donor compensation correlate with broader moral values that respondents considered important to them.[40]

Third, despite this polarization, the attitudes of about one-fifth of respondents were trade-off-sensitive, i.e., they varied depending on how many additional transplants a paid-donor system would enable. Expanded availability of kidneys increased these individuals' support for legalizing organ donor compensation and reduced their ethical concerns. Thus, although our evidence shows that moral concerns do pose a constraint to introducing a price mechanism in this context, at the population level positive supply effects of paying organ donors may significantly change societal support for legalizing these payments. A policy implication of this finding is that pilot studies of compensation to organ donors would be useful to produce evidence of the potential effects on the number of transplants. Without this evidence, a large share of Americans would lack a crucial element to guide their preferences. The previous findings, however, suggest that pilots should also evaluate whether paying organ donors violates ethical principles.

A fourth insight is that attitudes toward paid-donor systems depend on certain procedural features. In particular, there is a difference between the aversion to

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[39] See, e.g., Mouw and Sobel (2001) on abortion.

[40] It is interesting to compare some of our findings to those of Gibson, Tanner, and Wagner (2013) and Falk and Szech (2013, 2017). In Gibson et al.'s experiment, subjects could report either a truthful (hypothetical) earning, or an untruthful one, in five scenarios with different monetary gains from lying. Of the 261 subjects, about 19.5 percent always reported the truth regardless of the gains from not doing so, 17.6 percent never reported the truth, and the remaining 62.9 percent displayed trade-off-sensitive responses. In two different experiments, Falk and Szech study the willingness to let a mouse be killed in exchange for money; they find that between 28 percent and 54 percent (Falk and Szech 2013) and between 41 percent and 56 percent (Falk and Szech 2017) of their study participants were not willing to support the killing of the animal in exchange for money. In our study, the proportion of individuals who declared to be unwilling to let organ donors receive compensation regardless of kidney supply gains is between 10 percent and 29 percent (depending on the specific system features). Of course, there are many differences between our study and those described above. For example, we focused on individuals' attitudes to allow others to engage in a certain morally controversial transaction, without any monetary benefits to themselves; moreover, the act of donating a kidney without compensation is not considered immoral (quite the opposite, in fact), whereas the acts of killing a mouse and not telling the truth are morally questionable regardless of whether they involve monetary exchanges.

paying donors and the aversion to having a recipient pay; a large portion of the opposition to legalizing compensation derives from whether payments come from the kidney recipient or from a third party such as a public agency. Concerns about fairness to patients were much more severe in the former case than in the latter. In fact, the respect of fairness in the allocation of organs was the most relevant principle for respondents among the six that we considered. This finding has implications for policy because it indicates that appropriate institutional design can allay a major ethical concern in this context.[41]

The joint consideration, in our study, of the role of increased kidney availability due to compensation as well as of procedural aspects of the organization of organ procurement and allocation, together with the investigation into the ethical roots of attitudes toward these features, permitted a detailed exploration of how people perceive the moral limits of markets, how deep their differences in attitudes are, and whether and how individuals make trade-offs between potentially competing values. Our conceptual framework and experimental design attempted to integrate an economic approach to these issues with insights from several other disciplines, such as work in social psychology on moral foundations and studies in experimental philosophy. We see this as a fruitful confluence, one that can enhance our understanding of the nature of preferences in repugnant transactions and of the reasons why societies may keep certain activities and transactions out of the marketplace. In fact, we expect our methodology to apply to other morally controversial transactions. For example, there is evidence that legalizing indoor prostitution enhances social welfare by reducing violence and STD incidence (Cunningham and Shah 2018). Similarly, abortion tends to be safer in countries where it is legal (Faúndes and Shah 2015). Our approach could be used to assess whether these or other welfare gains are sufficient to induce a majority of voters to legalize a transaction in spite of ethical concerns.

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[41] The identity of the payer likely has different effects for other morally controversial activities. For example, in the United States the Hyde Amendment prohibits the use of federal funds to cover abortion services unless the pregnancy was the result of rape or incest, or if it would endanger a woman's life (Keith 2018). Similarly, it is doubtful that Americans would be more open to considering legalizing prostitution if sex workers were paid by a public agency and free for the clients.

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