Altruism Exchanges and the Kidney Shortage

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Abstract. Not enough kidneys are donated each year to satisfy the demand from patients who need them. Strong moral and legal norms interfere with market-based solutions. To improve the supply of kidneys without violating these norms, we propose legal reforms that would strengthen the incentive to donate based on altruistic motives. We propose that donors be permitted to donate kidneys in exchange for commitments by recipients or their benefactors to engage in charitable activity or to donate funds to charities chosen by donors. And we propose that charities be permitted to create Altruism Exchanges, which would permit large numbers of altruists to make charitable exchanges with each other, including but not limited to kidney donations. Altruism Exchanges would solve two significant problems with the current system of voluntary kidney donations: the risk of default and the lack of liquidity.

1. Introduction

There is a gross disparity between the number of patients in the U.S. who are in need of kidney transplants and the availability of kidneys to be transplanted. In any given year, as many as 90,000 Americans need a kidney transplant, while fewer than 20,000 will receive them from live or cadaveric donors.[1] It is not uncommon for patients to get so sick while waiting to receive a kidney that they are unable to receive one at all, even if it eventually becomes available. Increasing the number of kidney donations is an urgent matter for public policy.

Some economists believe that the solution to this problem is to permit people to buy and sell kidneys.[2] On the demand side, people with chronic kidney disease

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[1] *See* Miriam Schulman, *Kidneys for Sale: A Reconsideration*, MARKKULA CENTER FOR APPLIED ETHICS (Apr. 2012), http://www.scu.edu/ethics/practicing/focusareas/medical/kidney-sale.html (reporting numbers for 2011).

[2] *See, e.g.*, Gary S. Becker & Julio Jorge Elias, *Introducing Incentives in the Market for Live and Cadaveric Organ Donations*, 21 J. ECON. PERSP. 3 (2007); *see also* Kathryn Shelton & Richard B. McKenzie, *How Free Market Kidney Sales Can Save Lives – And Lower the Total Costs of Kidney Transplants*, LIBRARY OF ECON. & LIBERTY (Mar. 5, 2012), http://www.econlib.org/library/Columns/y2012/SheltonMcKenziekidney.html.

suffer from acute distress as well as increased mortality. Many of them would be willing to pay for a new kidney, especially if the price is not too high. And even for those who would not be able to afford a new kidney, their insurer would likely be willing to pay for one, because the price of a kidney will likely be less than the cost of medical care for end-stage renal disease, including the expense of dialysis treatments.

On the supply side, some people already donate kidneys for free,[3] and, given standard assumptions about behavior, it is likely that additional people would be willing to sell a kidney for a high enough price. Black markets in other countries suggest as much, and there are estimates suggesting that the market would clear at about $150,000 paid by the buyer per kidney.[4] Some people might be willing to accept a small payment in return for the commitment to donate their kidneys at the time of death. Alternatively, they might wish to "sell" their kidneys at death, with the proceeds going to heirs.

But a legal market in kidneys will not come into existence in the foreseeable future. People harbor strong moral intuitions against buying and selling kidneys and other human organs,[5] and these intuitions have been embodied in law.[6] The National Organ Transplant Act of 1984 (NOTA) prohibits the knowing acquisition, receipt, or transfer of any human organ for "valuable consideration for use in human transplant."[7] Consideration is a legal concept that undergirds contract law – it means, "a bargained for exchange, a promise for a promise, or a promise for a performance."[8] Thus, a person may not transfer a kidney to another person in

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[3] The number has varied between 100 and 200 per year over the last several years. See http://optn.transplant.hrsa.gov/latestData/step2.asp? (request a report for category "transplant" and organ "kidney" and then consult table under the heading "Non-Biol, unrel: Anonymous Donation").

[4] The average price paid to the seller of a kidney in the black market is much lower, at $5,000 per kidney. *See Havocscope Global Black Market Information*, HAVOCSCOPE.COM, http://www.havocscope.com/black-market-prices/organs-kidneys/ (last visited Jan. 5, 2013).

[5] Discussed, for example, in DEBRA SATZ.,WHY SOME THINGS SHOULD NOT BE FOR SALE: THE MORAL LIMITS OF MARKETS (2010); *see also* MICHAEL J. SANDEL, WHAT MONEY CAN'T BUY (2012); ELIZABETH ANDERSON, VALUE IN ETHICS AND ECONOMICS (1995).

[6] *See* Flynn v. Holder, 684 F.3d 852 (9th Cir. 2012) (discussing the various concerns); Julia D. Mahoney, *Altruism, Markets and Organ Procurement*, L. & CONTEMP. PROBS. 17 (2009) (noting the long standing hostility to using financial considerations to motivate organ donations).

[7] 42 U.S.C. §274 (2006). The legislative history of NOTA is extensive and takes up over 1,500 pages in the Congressional reports. Responding to technological and medical advances that made organ transplants easier to perform effectively, Congress was concerned with restricting the development of a market for organs (in particular, kidneys) because of the fear that the poor, in particular, would be induced into undergoing high-risk medical procedures in exchange for minimal compensation. Congress appears to have been unduly optimistic about the level of altruistic donations that would take place. *See* S. REP. NO. 98-382 (1984); H.R. REP. NO. 98-1127 (1984).

[8] *See, e.g.* ROBERT E. SCOTT & JODY KRAUS, CONTRACT LAW AND THEORY 43-44 (4th ed., 2007). The statute uses the term "valuable consideration" so as to exclude the reimbursement of donors for reasonable costs incurred in the process of donating. Section 274e(c)(2). *See also* S. REP. NO. 98-382 at 16.

return for anything of value, such as money; nor may a person receive a kidney in return for anything of value.

But consideration is a slippery doctrine, and the kidney shortage has given rise to creative efforts to narrow the scope of NOTA's prohibition so as to enhance the supply of kidneys.

For example, donors are allowed to direct that their kidneys be given to certain people—family members, friends, and others. This may seem like a transfer without valuable consideration, but that is not necessarily the case. The donor may transfer to such people rather than to a stranger because she expects to receive something in return, for example, household services or help in some other matter. Only a donation to an anonymous stranger could clearly be without consideration. Nonetheless, the common law of contract generally treats intra-family transfers as without consideration, and regulated entities and regulators have apparently taken this position for kidney donations to friends and family, as well.[9] The acceptance of this fiction has been crucial to increasing the supply of live kidney donations in particular; in 2008, roughly 70% of all live kidney donations came from family members or friends.[10]

One reason for the acceptance of this practice may be that donations that are either altruistically motivated or that take place within close relationships do not raise the specter of a "market" in kidneys, where the poor are exploited and the human body is commodified. As we will see, however, the moral and policy considerations are complex.

The transfer of kidneys also takes place through an arrangement known as the paired kidney exchange. Kidney exchanges address a common problem that arises when a person is willing to donate her kidney to a potential recipient but there is no match, so the kidney would be rejected. Sometimes, doctors can find another potential donor-recipient pair with the same problem, but where the donors in each pair are compatible with the recipients of the other pair. Donor 1 would like to donate to Recipient 1, but instead donates to Recipient 2, while Donor 2 donates to Recipient 1.

This transaction would almost certainly be regarded as a classic contractual exchange with consideration. Donor 1 promises his kidney to Recipient 2, in exchange for consideration, which consists of Donor 2's promise to transfer her

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[9] *See, e.g.,* a 2006 UNOS (United Network for Organ Sharing) Associate General Counsel memo, which analyzed the applicability of NOTA §301 to kidney donations, as follows:

> "Valuable consideration" under NOTA §301 is a monetary transfer or a transfer of valuable property between donor, recipient and/or organ broker in a sale transaction. It is not familial, emotional, psychological or physical benefit to the organ donor recipient . . .

[10] *See* U.S. DEP'T OF HEALTH & HUMAN SERV., OPTN/SRTR 2009 ANNUAL REPORT, Table 2.9 (Living Donor Characteristics, 1999 to 2008: Kidney Donors), *available at* www.ustransplant.org/annual_reports/current/209_dc.pdf.

kidney to Recipient 1. It is true that the transfer back to Donor 1 consists of a benefit to someone else. But under the consideration doctrine, consideration exists even when the recipient does not receive a benefit; it is sufficient that the giver of a good or service or promise undergoes a detriment, which the loss of a kidney certainly is to the donor. Compare a transaction where Donor 1 forgives a debt to Recipient 2 in return for which Donor 2 forgives a debt to Recipient 1. Courts would enforce this transaction, regardless of whether the underlying motivations are commercial or altruistic.

The Department of Health and Human Services agreed that pair exchanges might involve the exchange of "valuable consideration."[11] As a result, hospitals were initially unwilling to perform pair exchange transplants.[12] For this reason, Congress passed the Charlie W. Norwood Act Living Organ Donation Act ("The Norwood Act"), which provides that a kidney exchange does not involve the exchange of consideration as a legal matter.[13] Thus, kidney exchanges were taken outside the ambit of NOTA.

The apparent moral acceptance of kidney exchanges embodied in the Norwood Act suggests that the objection to a kidney "market" does not lie in the existence of exchanges of consideration per se, even when the exchange takes place between strangers. Instead, the objection appears to lie with the motivation behind the sale of kidneys for cash. In the case of an altruistic donation, donors can benefit only from the improvement of the well-being of the recipients, and not from pecuniary compensation. Concerns about market transactions resulting in the commodification of humans are not implicated. Moreover, poor people cannot enter a paired exchange to make money, and so this source of coercion is absent. The altruistic element seems to take these transactions outside the realm of the type of market transactions that many find repugnant.[14]

Our discussion so far has only touched on difficult moral issues, but it suggests that the usual debate about whether people should be allowed to sell kidneys or not is too starkly drawn. There are degrees between a pure donation of a kidney and a sale, and moral intuitions may permit transactions that fall between the two extremes, like the paired kidney exchange. The purpose of our paper is to press further on this ambiguity, and to propose further intermediate transactions that do not offend moral intuitions and thus will expand the supply of kidneys.

We present three proposals. First, we argue in favor of an expansion of the range of counterparty altruistic donations that may be exchanged for a kidney

[11] *See* John A. Schall, *Congress Passes Legislation on Paired Kidney Donation*, AMERICAN ASSOCIATION OF KIDNEY PATIENTS, http://www.aakp.org/aakp-library/Paired-Kidney-Donation/ (last visited Nov. 13, 2012).
[12] *See id.*
[13] Charlie W. Norwood Living Donation Act, 121 Stat. 1813 (2007).
[14] *See* Alvin E. Roth, *Repugnance as a Constraint on Markets* 21 J. ECON. PERSP. 37 (2007); LEON R. KASS, LIFE, LIBERTY AND THE DEFENSE OF DIGNITY: THE CHALLENGE FOR BIOETHICS 177, 182-85 (2002).

donation (including non-kidney related charitable donations of other organs, goods, and services). Second, we argue for the use of monetary transfers in altruistic exchanges. Lastly, we explore the role of intermediaries in assisting altruistic exchanges. We propose that charities create what we call "Altruism Exchanges," intermediaries that enable people to donate kidneys (and other things) in return for a commitment by others to make charitable donations or engage in charitable acts.

Section 2 surveys the current forms of kidney exchanges allowable under NOTA and the moral debate about kidney markets. Section 3 presents our three proposals. Section 4 discusses the legal implications of our proposals. Section 5 concludes.

2. Background on Kidney Donation, Kidney Markets, and the Law

NOTA prohibits the transfer of a human organ for "valuable consideration for use in human transplantation if the transfer affects interstate commerce."[15] Transfers of kidneys that are not made for "valuable consideration" are allowable under NOTA.[16]

Contract scholars are familiar with the concept of consideration but many readers will not be. In contract law, a promise is (generally speaking) enforceable as a legal obligation only if it was motivated by bargained-for consideration. This means that the person who makes the promise did so in order to induce the other person (the promisee) to do something. The classic example is an ordinary sale, as shown in Figure 1.

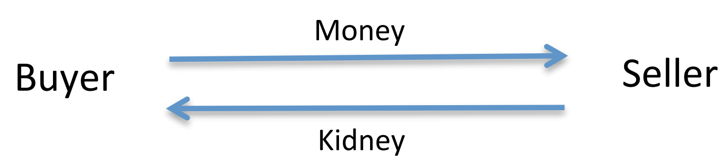

Figure 1

If the seller promised an ordinary good or service, this contract would be enforceable. The seller's promise to deliver the good or service is consideration for the buyer's promise to pay money, and the buyer's promise to pay money is consideration for the seller's promise to deliver the good or service. Of course, because the seller in our example promises her kidney, the contract is not enforceable.

[15] 42 U.S.C. §274 (2006).
[16] *Id.*

At the opposite extreme of an ordinary sale, is the gratuitous promise, where a donor promises something to a donee in return for nothing at all, as shown in Figure 2.

Donor $\xrightarrow{\text{Kidney}}$ Recipient

Figure 2

Under the common law of contract, the donee is not permitted to enforce the donor's promise if the donor decides not to perform. However, if the donor does perform, the transfer of the gift is valid and enforceable.

NOTA bans the sale shown in Figure 1, and not the donation shown in Figure 2. Two justifications are commonly given for the ban. First, the sale of kidneys commodifies the human body, treating people as a batch of "spare parts."[17] Second, burdens of a for-profit kidney market would fall disproportionately on the poor who will systematically be more likely to sell their kidneys for profit than the relatively wealthy.[18]

We will assume that both these justifications are correct for the purpose of this paper, but we note in passing that they are far from self-evident. Proponents of the commodification objection have not explained why exactly the sale of a kidney or organ is morally offensive in itself. We suspect that objections reflect an inarticulate sense of disgust, much as in-vitro fertilization and surrogacy contracts once did, rather than legitimate moral concerns.[19]

The objection rooted in concern for the poor is questionable because normally one would expect the poor to benefit more than the wealthy from the expansion of market opportunities. In this case, poor people would more likely

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[17] *See, e.g.,* NOTA: Hearing on H.R. 4080, 98TH CONG. 2D. SESS 26 (1984) (statement of Rep. Waxman); S.REP. NO. 98-382, at 17. There is a growing literature debating whether markets for organs should be permitted. *See, e.g.*, JAMES STACEY TAYLOR, STAKES AND KIDNEYS: WHY MARKETS IN HUMAN BODY PARTS ARE MORALLY IMPERATIVE (2005); *see also* Gilbert Meilaender, *Gifts of the Body*, THE NEW ATLANTIS 25 (2006), *available at* http://www.thenewatlantis.com/publications/gifts-of-the-body; Benjamin Hippen et al., *Saving Lives is More Important Than Abstract Moral Concerns: Financial Incentives Should be Used to Increase Organ Donation*, 88 ANN. THORAC. SURG. 1053 (2009).

[18] *See, e.g.,* Dan Bilefsky, *Black Market for Body Parts Spreads among the Poor in Europe*, N.Y. TIMES, June 28, 2012 (detailing the story of an unemployed father who put his kidney up for sale to support his family).

[19] *See* Roth, *supra* note 13; *see also* Patricia Cohen, *Economists Dissect the Yuck Factor*, N.Y. TIMES, Jan. 31, 2008.

need the money they could gain from selling their kidneys than rich people would. Critics of kidney markets argue that for precisely this reason the poor are likely to be coerced. The poor lack the information and sophistication to make good decisions regarding kidney sales.[20] But this objection is one to markets generally, not to kidney markets. One could make the same argument about, say, credit markets, where poor people often make bad decisions because of coercion and lack of sophistication. But no one wants to eliminate credit markets in order to protect poor people. If poor people are susceptible to exploitation, they could simply be forbidden to sell their kidneys, just as usury and related laws have been used to restrict the extension of credit to the poor. Under such a scheme, poor people (and everyone else) would benefit from having the ability (through insurance) to buy kidneys sold by non-poor people who would like the extra money. It is unclear why people (rich and poor) should have to die or suffer through dialysis so as to protect (some) poor people from bad choices.

In any event, these harms are associated with the for-profit sale of kidneys, not altruistic donations. As Healey and Krawiec observe, NOTA embodies a "[c]ongressional concern with the buying and selling of human organs for profit, rather than an attempt to prohibit all transactions in kidneys that involve some element of exchange."[21] In the Norwood Act, Congress made clear that NOTA's prohibition of the exchange of valuable consideration for human organs does not apply to simultaneous, paired altruistic exchanges of kidneys. The underlying thinking must be that poor people will not be tempted to donate their organs unless they are given a financial incentive; or if they donate their organs for altruistic reasons, that choice should be respected. Congress in NOTA displayed a preference for increasing the supply of organs available for donation so long as compatible with protecting the interests of the poor.

The most altruistic form of kidney donation is the pure gift where a donor gives her kidney without any expectation of any financial or non-financial consideration—such as a donation of a kidney to a complete stranger. As noted in the Introduction, matters are more complex when a person transfers a kidney to a relative or close friend. While altruism may motivate such a donation in part, other factors likely also motivate the donation. When a friend "donates" money to another friend to purchase a car, the motivation may be altruistic but it need not be. The donor may expect return favors in the future. Nonetheless, the law does not treat a transfer or promise made with the expectation of an unspecified return transfer as motivated by consideration. We speculate that "commodification" does not take place when exchanges take place within close relationships, and that the poor, in particular, will not normally be coerced to enter into such transactions.[22]

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[20] *See* Satz, *supra* note 5 at 195-97.

[21] *See* Kieran Healy & Kimberly D. Krawiec, *Custom, Contract and Kidney Exchange*, 62 DUKE L. J. 645 (2012).

[22] This is not to say that the pressures to donate within a familial setting might not be coercive. But this problem is not unique to the poor. Our point in the present context that another source of coercion—money—is absent.

Many kidney donations do not follow the model of the one-sided donation to a stranger or friend. It frequently happens that one person wants to donate a kidney to another, but the intended recipient is unable to receive the kidney because of immune-system incompatibility. The particular donor-recipient pair will then find another donor-recipient pair where the first donor's kidney matches with the second recipient and vice versa. The pair then exchanges kidneys simultaneously. Donor 1 gives his kidney to Recipient 2; Donor 2 gives her kidney to Recipient 1. Figure 3 depicts this transaction.

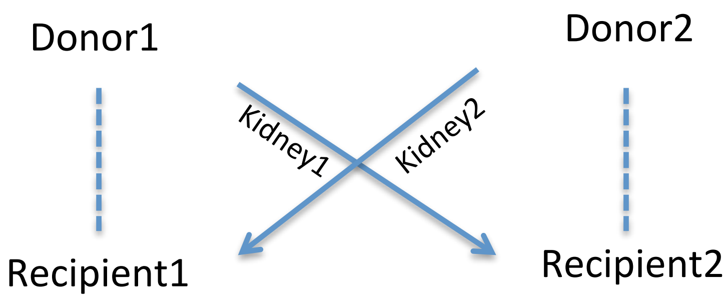

Figure 3

While such an exchange is (or may be) motivated by altruistic desires on the part of both donors, it is still an exchange. Each donor gives up a kidney in order to cause the other donor to give up a kidney. The law would probably not regard each donor as receiving a "benefit" because the donor does not receive anything in return, but it is clear that giving up a kidney is a "detriment," and thus consideration.

Presumably in response to concerns that such exchanges violate NOTA, Congress passed the Norwood Act, which provided that a kidney exchange does not count as an exchange for "valuable consideration." Congress could have said a kidney exchange is lawful even though valuable consideration is exchanged; instead, it said that a kidney exchange does not involve the exchange of valuable consideration. This distinction is important rhetorically. Congress must have believed that two things bother people about organ exchanges: that a market-like "exchange" occurs and that profit seeking might motivate such exchanges. The Norwood Act reveals that Congress was willing to relax the rule against exchanges, making clear that the real motivation for bans on organ markets is opposition to self-interested or for-profit organ transfers as opposed to altruistic organ transfers.

Recent innovations in kidney exchanges have relied on the notion that altruistically motivated exchanges do not run afoul of Congress's intent in NOTA and thus should also benefit from the legal fiction that such exchanges are not for valuable consideration. The newest forms of exchanges involve non-simultaneous, extended, altruistic donor chains (NEAD chains). One altruistic donor starts a NEAD chain with a one-sided donation to a stranger, typically with no expectation of anything in return. After this first altruistic donor, however, NEAD chains involve a series of exchanges where one donor transfers her kidney to another recipient only after receiving a kidney for her particular recipient. Instead of having a mutual exchange between two matching pairs of donor-recipients, a NEAD chain involves serial exchanges across otherwise unconnected donor-recipient pairs. Much like a mutual exchange, the NEAD chains are motivated by altruism on the part of the donor (to aid her particular recipient) and thus also arguably fall under the legal fiction that such exchanges do not involve "valuable consideration" despite the more extended nature of such exchanges for consideration.[23]

Other possible altruistic exchanges exist. Some donors may desire to time-shift their donations. A father of a child with kidney disease may want to donate his kidney but not have the need to do so for many years. Looking ahead, the father may worry that when his child needs a kidney, the father may be too old to be a viable donor. The father may therefore desire to donate his kidney to a recipient today in return for a donation to his child later in time. Or alternatively, he may be willing to donate his kidney in exchange for his child being given priority on the waitlist for available kidneys.[24] What distinguishes altruistically motivated exchanges—whether involving two matching donor-recipient pairs, chains of kidney exchanges, or time banking exchanges—is the underlying motivation behind such transactions. The donor is motivated not by an immediate financial gain but instead by a desire to donate her kidney to another person that—because of tissue incompatibility or a time shifting problem—is simply not feasible without such a kidney exchange.

The next stage in this series of efforts to expand the supply of kidneys in the face of legal constraints moved beyond altruism. Lifesharers is a non-profit organization that brings together organ donors who agree to donate their organs upon their own death in return for first access to the organs of other Lifesharers members.[25] Donations through the Lifesharers program both involve consideration (the donor receives the right to first access in return for the donation) and self-interest (the donor benefits himself rather than another by obtaining first access). The program stop shorts of a full-fledged market, however, because it does not allow donors to receive pecuniary compensation. The program is, in effect, a for-profit (albeit in-kind rather than financial) barter market. Our view is that Lifesharers goes too far, because it involves no altruism on the part of the donor, and violates NOTA for that reason.

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[23] *See* Healy & Krawiec, *supra* note 21 (discussing NEAD chains and relationship to gift exchange).
[24] In some countries, consent to donations of organs upon death is the default presumption. Those who take themselves off the presumed consent list are given a lower priority, should they need to be on the queue themselves. *See* Judd Kessler & Alvin E. Roth, *Organ Allocation Policy and the Decision to Donate*, 102 AMER. ECON. REV. 2018 (2012) (finding, in the context of an experimental setting, a significant impact of the use of priority schemes on the likelihood of registration for organ donation).
[25] *See* LIFESHARERS, http://www.lifesharers.org (last visited Nov. 13, 2012).

Lifesharers is (or, we suspect, will be) a cautionary tale about the limits of the law in the area of organ donations. However, the supply of organs can be expanded without going as far as Lifesharers does. The key is to ensure that organ donations and "exchanges" are motivated by altruism, or at least predominantly motivated by altruism.

The existing legal scheme, and efforts to circumvent it, raise difficult questions about the underlying moral and policy goals that the law seeks to advance. As noted, philosophers identify two basic goals: avoidance of the "commodification" of the human body and protection of the poor. However, the notion of commodification is not clearly specified: does it mean that one cannot gain at all from giving a kidney; that one may gain only unspecified benefits (future gratitude or loyalty); that one may gain only in-kind benefits for a third party (for example, a kidney for an altruism-linked beneficiary); or that one may gain in-kind stochastic benefits for oneself but not money (the apparent premise of Lifesharers)? We suspect that people become increasingly uneasy about the donation of kidneys when the return benefit becomes more specific, more closely tied with the (selfish) well-being of the donor, or more fungible (with money being the extreme). The same point can be made about the poor: perhaps they are more likely to donate their kidneys for bad reasons when the return benefit is money rather than the other types of consideration. Our proposals navigate these complexities, providing a means to expand the supply of kidneys for transplant while addressing the concerns related to commodification of the human body and the protection of the poor.

3. Proposals

3.1. Altruistic Exchange Through Barter

Under existing law, the donation of a kidney for altruistic reasons is permitted. Furthermore, kidney-for-kidney swaps are considered altruistic, so long as the kidneys being swapped were being given for altruistic reasons. Once we accept that an individual who wishes to give someone else a kidney for altruistic reasons can be allowed to swap that kidney for another kidney also being given for altruistic reasons (altruism on both sides), that opens up a range of additional possibilities.

People vary considerably in their altruistic preferences. Some of us might be willing to donate our kidneys in order to obtain a kidney for a loved one. But there are others who might have equally strong inclinations toward altruism, just not in the direction of helping someone who needs a kidney. They care about other issues – funding cancer research, for example, or improving education in Africa. These individuals may not be willing to donate their kidneys, but might be willing to do so in return for a charitable benefit that they care about. Put another way, there may be some people just at the margin with respect to donating a kidney, or indeed a bit away from the margin, who will in fact choose to donate if given additional altruism-related motivation.

Our first proposal, therefore, is to expand the definition of an altruistic exchange to take advantage of the existing legal fiction that altruistic exchanges are not for "valuable consideration" for purposes of NOTA. Under this proposal, a person may "barter" his kidney in return for a promise by someone else to engage in a charitable activity. Figure 4 shows this type of transaction.

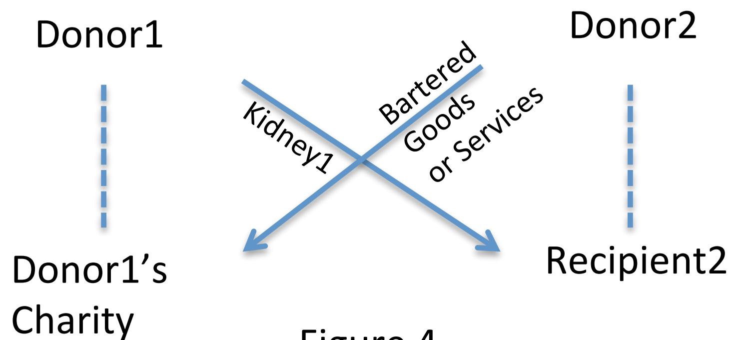

Figure 4

Suppose Andy is a math teacher who wants to find a kidney for his sister Alice. Andy's kidney is not compatible with Alice's immune system, however. Beth has a kidney that is compatible with Alice's immune system, but Beth does not care about Alice and only marginally cares about kidney donations in general. Instead, Beth has an altruistic preference for helping poorly educated children in developing countries—for example, by funding teachers for them. Beth herself is unable to leave the country nor does she have any teaching experience. Under a broadened concept of altruistic exchange, Beth could agree to donate her kidney to Alice in return for Andy's promise to work for two years as a teacher in a developing country. Indeed, we would permit Beth to donate her kidney to Alice in return to a promise from *Alice* to engage in the charitable activity (an exchange we refer to later in the paper as one-sided altruism because while Beth is acting altruistically, Alice is not since Alice, the kidney recipient, herself benefits from the transplant); Andy's participation is not necessary unless Alice is unable or unwilling to do so. Meeting Beth's altruistic desire to provide teachers to disadvantaged children plus any additional altruistic benefits Beth may receive from saving another person's life through kidney donations in our example pushes Beth across the margin so that she donates her kidney.

The major difference between this example and approved kidney exchanges is that Beth, the kidney donor, receives what we will call a "charitable benefit" (activity that advances Beth's charitable goals) rather than another, more compatible kidney for someone she cares about. This difference is a problem from a legal perspective. The Norwood Act excludes only the "human organ paired donation," that is, the kidney exchange, from NOTA's prohibition on the transfer of kidneys for valuable consideration. An argument could be made that a barter exchange does not run afoul of NOTA's prohibition on exchanges of kidneys for "valuable consideration" because that prohibition does not rule out altruistic exchanges; but if that interpretation were correct, it would be hard to understand why Congress felt that the Norwood Act would be necessary to permit kidney exchanges.[26]

However, the more important point for present purposes is that the moral and policy impulse behind NOTA and the Norwood Act extends straightforwardly to kidney barters. In a kidney exchange, Donor 1 gives a kidney to Recipient 2, in return for Donor 2 giving a kidney to Recipient 1. In a kidney barter, Donor 1 gives a kidney to Recipient 2, in return for Donor 2 giving a charitable benefit to a third party. We see no morally relevant distinction between Donor 2 giving a more general charitable benefit (of which a kidney is just one instance) and giving a kidney; nor do we see a relevant moral distinction between Donor 2 giving this benefit to anonymous third parties (for example, children in developing countries) and giving this benefit to an identified Recipient 1.

Indeed, the usual reasons for being skeptical of kidney markets provide a stronger case for kidney-for-charitable-benefit exchanges (that is, barter) than for kidney exchanges. The kidney barter requires only one person to give away a kidney rather than two; thus, any type of "commodification" problem is minimized. Moreover, the kidney barter permits potentially superior charitable benefits. One might believe, for example, that helping disadvantaged children in poor countries is more morally compelling than helping an American—perhaps an elderly person who has already lived a full life and is surrounded by luxuries—who happens to have a friend or family member willing to make a kidney donation.

In practical terms, our proposal potentially expands the potential supply of kidneys (as well as other forms of charity). Under current law, people will make living donations of kidneys only out of "pure" (stranger) altruism, which is exceedingly rare, or to benefit a relative or friend. But there is a possibly large pool of people whose altruism takes other forms, who may be willing to donate a kidney in order to help a cause. Under our proposal, those people will be able to, and motivated to, add their kidneys to the supply. Moreover, our proposal addresses the concern of those who argue that providing a for-profit payment to donors will cause

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[26] An indication of the government's likely view on such a program is the position that the Department of Justice took in a recent case involving bone marrow donations. In that case, *Flynn v. Holder*, a non-profit organization, MoreMarrowDonor.org, which was seeking to increase bone marrow donations, proposed giving $3,000 in scholarships, housing allowances or gifts to charities of the donor's choice. Both parties agreed that the payments constituted valuable consideration under NOTA. The plaintiffs contended that NOTA did not apply because bone marrow extracted via the newly invented process of apheresis constituted a form of blood, which had specifically been excluded from the ambit of NOTA. The Ninth Circuit agreed with the plaintiffs. 684 F.3d 852 (9th Cir. 2012).

the altruists to exit the market, presumably because the act of donation no longer carries with it a "pure" signal of altruism.[27] Because all exchanges under our proposal are motivated by altruism, those who desire simply to donate a kidney to help another or in return for another kidney should not react negatively to the prospect that others are donating their kidneys in return for some unrelated but nonetheless altruistic benefit.

An "altruistic exchange" may sound like an oxymoron, but it is not. As Figure 4 shows, an exchange is compatible with altruism. The donor's motivation for making a kidney donation must be to provide a benefit to a third party, not to benefit himself. The feature is also present in the kidney exchange; the only thing we add is the idea that a donor may donate her kidney in order to benefit a chosen recipient by obtaining for him something other than a kidney.

We can think of five objections to barter altruistic exchanges. First, one might wonder whether the donation of a kidney is such a large gift that it would be hard to find altruistic substitutes for it. The Beth in our hypothetical might simply not exist; real life Beths of the world may not be willing to donate their kidneys in exchange for Andy teaching in Thailand. At the margin, though, there are surely at least some types of altruistic exchanges that would help motivate additional donors.[28] While some will donate a kidney purely for the altruistic benefit from the donation, there may be others for whom helping a single other person is not sufficient motivation for making a donation, but helping many people or advancing a cause is. The question is an important one though and we will return to it in Section 3.6.

Second, there is the possibility of sham altruism. For example, Beth may agree to donate her kidney because she is in dire financial straits. In return, she asks that the counterparty in the transaction agree to "donate" his labor for the next two years working at XYZ charity (and in return XYZ charity will pass money under the table to Beth). Sham altruism nonetheless is a larger problem than just for our altruistic exchange proposal. In the United States, there already is a screening mechanism to identify charities that are deemed worthwhile enough to receive tax deduction status by the Internal Revenue Service under Section 501(c)(3) of the Internal Revenue Code. For our proposal, we would treat transfers of labor as altruistic if the labor is donated to a Section 501(c)(3) charitable organization.

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[27] *See* Richard A. Epstein, *The Human and Economic Dimensions of Altruism: The Case of Organ Transplantation*, 37 J. LEGAL STUD. 459, 475 (2008); Satz, *supra* note 5, at 193 (noting that "*intrinsic motivation* is partially destroyed when price incentives are introduced."); Sandel, *supra* note 5, at __ (same). For-profit kidney sales may also give sellers an incentive to sell kidneys that the sellers know to be diseased; presumably altruists would not have the same incentive to donate a kidney known to be with disease. *See* Satz, *supra* note 5, at 192; Maurice McGregor, *Pragmatic Altruism*, 160 CAN. MED. ASS'N J. 91 (1999) (same concern).

[28] *See* Epstein, *supra* note 27, at 470.

Third, matching different altruistic impulses directly through barter is significantly more difficult than matching donors and recipients in a kidney-for-kidney gift exchange. A universally agreed-upon rate of exchange exists for kidney-for-kidney exchanges: one kidney for one kidney. But how is Andy in our example supposed to find out that Beth is willing to exchange her kidney for two-years of teaching services in a developing country? Solutions are possible. MatchingDonors.com enable potential donors and recipients to find one another quickly by doing searches over the Internet.[29] With a small modification, websites such as MatchingDonors.com could allow those interested in donating a kidney in return for some other altruistic donation to post whatever kind of donation they seek. Those in need of a kidney (or friends and family of the potential recipient) could then search among desired altruistic donations to find a suitable match.

As with any barter market, altruistic gift exchanges also face the problem of comparability. Because there is no common medium of exchange, even if people eventually develop agreed-upon exchange ratios for certain altruistic exchanges (say 2 years of teaching for one kidney; 1 year of hard labor building homes for the homeless for one kidney; or 3 bone marrow transplants for one kidney), anyone seeking to obtain a kidney through an altruistic exchange must navigate all these different exchange ratios. Moreover, what if X is willing to donate 3 bone marrow transplants but no matching potential kidney donor wants this form of altruism in return? Instead, Y, a matching potential donor, wants someone to spend a year building homes for the homeless. X must then find and negotiate with Z, a person who cares greatly about bone marrow transplants and who is willing to work 1 year building homes, to craft a three-way trade that will ultimately induce Y to donate her kidney. The information and transaction costs associated with such a three-way altruistic transaction may prove considerable.

Fourth, where the altruistic exchange is not simultaneous, there is the problem of default. Andy, for example, may simply renege on his promise to teach math for two-years in a developing country after his sister Alice receives a kidney from Beth. Alternatively, if Beth promises to give up her kidney only after Andy teaches for two years, Beth may renege on this promise and keep her kidney once Andy completes his teaching work. While treating an expanded altruistic exchange as not for "valuable consideration" will result in the exchange meeting the restrictions of NOTA, it also undermines contract enforcement because a promise can be enforced only if it is made in return for consideration. As with kidney-for-kidney gift exchanges, an expanded definition of gift exchange to include kidney barter faces the problem of enforcement.

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[29] *See* MATCHINGDONORS.COM, http:// http://matchingdonors.com/life/index.cfm (last visited Nov. 13, 2012); *see also* Epstein, *supra* note 27, at 490-91 (discussing MatchingDonors.com and observing: "By narrowing the potential matches for any prospective donor and allowing easy interchange, it increases the odds of a directed donation, with a positive impact on supply.").

Lastly, providing extra altruistic incentives to induce more people to donate kidneys, such as Beth in our example, may change their behavior in potentially objectionable ways. Carl, for example, may initially plan to donate his kidney to benefit a stranger on the United Network for Organ Sharing (UNOS) wait list due to his altruistic preferences. The possibility of altruistic barter may cause Carl to drop this plan and instead donate his kidney to someone else. Carl may choose to donate his kidney instead to a particular recipient in California who has a friend willing to spend a year taking care of redwood trees in Marin County, a topic of particular importance for Carl. A critic might argue that our proposal will therefore undermine the priority order established within UNOS.[30] However, that priority order is already undermined by kidney donations to friends and family: the increase in supply justifies the marginal interference with the UNOS order (which itself is open to criticism). Our proposal would further expand the supply of kidneys, while having the additional benefit of expanding the supply of other charitable goods and activities as well.

3.2. Altruistic Exchange Through Money

Our second proposal is to permit altruistic exchange involving monetary donations rather than in-kind goods (like kidneys) or services (like teaching). Under this proposal, any person who donates a kidney would receive a sum of money that the person is required to use for charitable uses. The donor is permitted to donate the payment immediately or in the future to any charity. The only difference between this proposal and the first proposal is that the donor receives money earmarked to an as-yet unidentified charitable purpose rather than the immediate delivery of an identified charitable good or service.[31] Figure 5 shows the transaction.

[30] *Cf.* Sheldon Zink, Stacey Wertlieb, John Catalano & Victor Marwin, *Examining the Potential Exploitation of UNOS Policies*, 5 AM. J. BIOETHICS 6 (2005).
[31] *See* Sally Satel & Mark J. Perry, *More Kidney Donors are Needed to Meet a Rising Demand*, WASHINGTON POST, Mar. 7, 2010 (making a proposal along these lines). This proposal is also analogous to the proposal analyzed by the Ninth Circuit, in *Flynn v. Holder*, in the bone marrow context, where the organization MoreMarrowDonors.org, would donate $3,000 to a nonprofit or charity on behalf of the donor. 684 F.3d 852 (9th Cir. 2012).

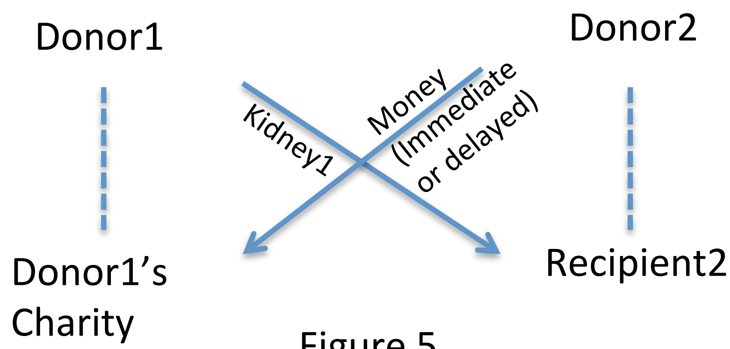

Figure 5

Suppose that Beth has a strong preference to fund the arts. Beth, however, lacks the financial means to make good on her altruistic preference to the extent she desires. Our proposal would allow Beth to donate her kidney in return for a lump sum payment to a particular art establishment such as a museum (so long as the recipient meets the Internal Revenue Code Section 501(c)(3) requirements as a charity).[32] One could also imagine post-mortem donations, where Beth could agree to donate her kidney upon her death in return for a donation of money in Beth's name to charities of Beth's choosing.

Allowing money as a medium of exchange also allows those with a desire to spread altruistic donations over time to do so, with money acting as a store of artistic value. Someone willing to donate a kidney in return for satisfying her altruistic preferences in another area may wish to store the value of the altruism over time or partition the altruism over different causes. Money allows the person donating the kidney to store the value of the altruism (in the form of money) until she desires to engage in altruism and divide the money across several different charitable causes. Beth, for example, may decide to give the money she receives for her kidney over the next ten years to different art programs in the San Francisco public school system depending on the performance of the different schools. Beth may also wish to use the money obtained from donating her kidney to "pay" for the donation of another kidney in the future. Allowing kidney donations in return for charity-restricted money thus allows someone like Beth to store the value of her kidney donation, allowing her to provide for a loved one in need of a kidney in the

[32] A reason to limit the recipients of donated money is the need to block transactions that might provide a hidden benefit to the kidney donor. For example, one might worry that a donor might donate her kidney in return for money that goes to her child, claiming that because she has an altruistic relationship with her child, she is entitled to donate in return for a charitable benefit for her child. Some people might argue that this type of transaction would harm poor people who care about their children, encouraging them to sell kidneys in order to finance their children's education. One might respond that this type of transaction does not seem like exploitation of the poor: money for a child's education may be money well spent. Nonetheless, by requiring that only qualified 501(c)(3) charities would be permitted to receive money payments in return for kidney donations, we foreclose this type of transaction if it were deemed objectionable.

distant future when her own kidney may no longer be a viable candidate for a transplant.

The use of money as a means of payment, even for altruistic exchanges, poses a number of challenges. First, if barter altruism exchanges run afoul of the law, as suggested above, then monetary altruism exchanges will as well. Thus, the law would need to be amended in order to permit monetary (as well as barter) altruism exchanges involving kidneys.

Second, the use of money as a medium of exchange may be viewed as qualitatively different simply because money will require participants in altruistic exchanges to put a price on a human body part, the kidney. Those worried about the commodification of the human body may object to having a price set for a kidney (say $50,000) even if the money must be used for charitable purposes. Of course, any altruistic exchange for kidneys implicitly requires a price (one kidney for one kidney; or in the case of our altruistic barter exchange example above, one kidney for two years teaching math in a developing country). The price, however, is not denominated in money terms but instead in terms of other body parts, goods, or labor. We are skeptical there is much difference between setting a price in dollar terms and setting a price based directly on body parts, goods, or labor. A price is just a shorthand reference to all the other possible things that one can buy using the purchasing power that one receives in return for a sale. Rather than exchanging a kidney for a kidney, or a kidney for support for art museums, one is exchanging a kidney for charity-limited purchasing power that would end up financing a kidney, an art museum, or any other approved charitable use. It is hard to see why the third activity is immoral if the first two are acceptable.

Another response to critics of cash payments is not to set the price of a kidney based on market forces but instead based on some objective metric that reflects the cost savings from a kidney transplant. Some authorities estimate that a kidney transplant will result in over $50,000 a year in saved dialysis costs for each kidney recipient. The price for a charitable donation of a kidney could therefore be set on the basis of this cost savings—for example, $100,000 if two years of dialysis are avoided.[33] The price therefore would not represent an attempt to quantify the inherent value of a kidney, and by extension a human being, but instead simply be based on the amount of cost savings from a transplant. Taking into account cost savings has one additional benefit. Rather than a simple one-kidney-for-one-kidney ratio in today's gift exchanges, one could imagine a price set based on the cost savings of a particular kidney. Therefore a kidney from a younger, healthier donor would receive a higher price than a kidney from an older or deceased donor simply because the kidney from the younger, healthier donor will last longer and result in greater dialysis cost savings as a result. The younger, healthier donor will thus have a greater incentive to donate to obtain a larger payout that the donor can then use to

[33] *See* Satel & Perry, *supra* note 31; Carmen Chai, *Kidney Transplants Could Save Health Care System Millions*, THE MONTREAL GAZETTE, Jan. 21, 2012

provide greater funding to the charities of her choice. While of course market forces will determine the price of dialysis treatments on which a kidney price based on cost savings will be set, these market forces will not directly be based on the value of a human life or organ but instead on the relative demand and supply of dialysis treatments. A technological improvement to dialysis machines, for example, will have a market impact on the cost of dialysis treatments that does not require any market valuation of a human life or organ.

In sum, our second proposal simply extends the legal fiction that NOTA does not treat altruistically motivated exchanges as for "valuable consideration" to include (a) a broader range of altruistic motivations and (b) the use of monetary payment as a medium of exchange. Nonetheless, as with a bartered altruistic exchange, monetary altruistic exchanges face the problem of default. What happens when Beth donates her kidney and then the counterparty reneges on his promise to give Beth's favorite charity a monetary payment? In addition, Beth must have a place to store her money that will also ensure that she actually uses the money only for altruistic causes. This is where the presence of institutions that can intermediate in altruistic exchanges provides a solution. This is the subject of our third proposal.

3.3 Intermediaries and Enforcement Mechanisms

Our third proposal addresses the role of intermediaries both in ensuring compliance with NOTA and in enabling a mechanism for enforcement of altruistic exchanges. We focus on specific charities as altruistic exchange intermediaries, or what we call "Altruism Exchanges." Consider a charity, for example, the Red Cross, which announces that it will henceforth accept kidney donations (on behalf of recipients) and in return will allocate funds to charities designated by the donor, up to the amount thought to be the value of the kidney donation (for example, the medical costs that are saved, which may be as much as $100,000). We would permit a person who wants to help a person who needs a kidney[34] to "donate" a cash payment to the charity in return for a promise from the charity to find a kidney for the beneficiary. The charity will match the kidney donor's kidney with a specific person donating cash—choosing the recipient of the kidney from the pool of existing cash-donor-recipient pairs based on tissue compatibility and, in case of equal tissue compatibility, the time order with which the cash donor transferred money into the Altruism Exchange. The charity will then use the monetary donations to finance the kidney donor's charitable agenda up to $100,000. Figure 6 shows how the Altruism Exchange would work (where, for the purpose of example, we depict Recipient2 as the recipient whose donor made a payment to the Altruism Exchange before any of the other donors, assuming tissue compatibility).

[34] And also potentially the recipient himself; but this raises additional issues that we will discuss in the next section.

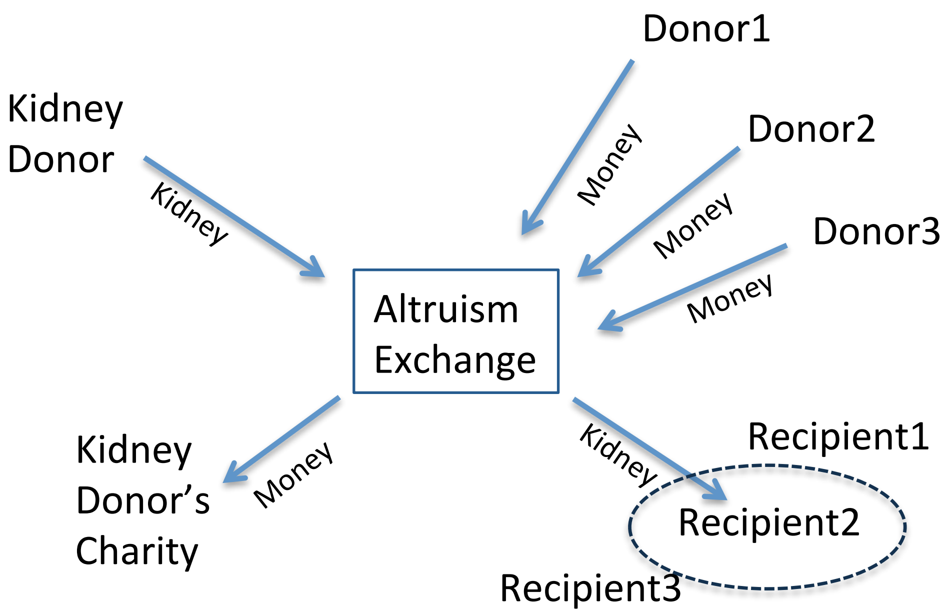

Figure 6

The main advantage of the Altruism Exchange is that it introduces liquidity. Currently, it is difficult and expensive to arrange kidney exchanges and kidney chains. When the donor and recipient do not match, officials must search out a matching pair or construct a chain, and this involves laborious information gathering. All donors and recipients must wait until the pair or chain is constructed, and then operations must be performed simultaneously or close to that. By contrast, the Altruism Exchange would enable donors to make kidney donations whenever they want. Thus, a continuous supply of kidneys would enter the pipeline. Meanwhile, their designated recipients would receive kidneys based on tissue compatibility and the order in which donors make donations. The kidney supply would be further expanded as a result of the donations from altruists who seek monetary benefits for other beneficiaries.

The Altruism Exchange would also reduce counterparty risk. Consider (a) the donor of a kidney (Donor K), (b) the counterparty donor of money (Donor M), (c) the recipient of the kidney (as selected by the counterparty) (Recipient K), and (d) the recipient charity of the money (as selected by the donor of the kidney) (Recipient M). The Altruism Exchange would handle the transfer of money from Donor M to Recipient M and the transfer of the kidney from Donor K to Recipient K. Because each party deals directly only with the Altruism Exchange, each party would look to the Exchange for performance. Donor M would move first by paying the Altruism Exchange. Donor K would next donate his kidney to Recipient K. If he does so, then the Altruism Exchange would pay Recipient M. If Donor K reneges on his promise, then the Altruism Exchange would put Recipient K at the top of its list for kidney donations and allocate the next compatible kidney to her. Donor M's money would be allocated to the next kidney donor's chosen beneficiary rather than to Recipient M. If enough people are involved in the Altruism Exchange, wait times would be negligible; Donor M would not even know that Donor K had reneged.

The Altruism Exchange could handle storing the value of the money for Donor K until Donor K selects the specific charity (Recipient M which could include a future recipient in need of a kidney transplant) to which the money should be transferred. The Exchange could also screen charities, going beyond the 501(c)(3) list of charitable entities. Administrators of the exchange market could reduce the number of charities from the 501(c)(3) initial list based on various criteria including the number of years in operation, the size of the charity, the purpose of the charity and so on. While reducing the scope of eligible charities may reduce the potential pool of altruistic donors, so long as the pool of charities includes charities that many people care about—including the Salvation Army, and so on—the pool of potential kidney donors will be greater than under the current altruistic chain of donations system.

Looking beyond specific donor pairs, the Altruism Exchange could also act as a receiver of general charitable donations aimed at increasing the number of available kidneys for donation. Suppose a number of people wish to help those in need of a kidney but do not wish to donate their own individual kidneys. These people could each donate a small amount of money that the Exchange will aggregate into a larger sum that can be used to pay for the charitable benefit desired by the person who donates a kidney. The Altruism Exchange allows those with some preference to help those in need of a kidney, but not strong enough of a preference to donate their own kidney, to act on this preference. The Altruism Exchange could then distribute kidneys obtained through donated money to those on various regional waiting lists for kidney transplants, alleviating the wait times on these lists. Alternatively, the exchange could pay for a kidney and then use the kidney to launch a NEAD chain.

3.4 Do the Commodification and Poverty Objections Apply to Altruism Exchanges?

The major focus of the commodification concern—the sale of body parts in return for cash consideration—is absent in the Altruism Exchange.[35] Nonetheless, those who worry about commodification may object to the Altruism Exchange for two reasons. First, the Altruism Exchange will need to identify a "price" at which a monetary donation to a designated charity will entitle a donor's beneficiary to receive a kidney. In this respect, the Altruism Exchange raises the same issues as monetary transfers discussed above.

[35] Because the donor of a kidney receives no direct cash payment, the commodification concern is similarly absent from our proposals for barter and monetary altruistic exchanges that occur outside of a formal Altruism Exchange.

Second, one might worry that the Altruism Exchange will "crowd out" more purely altruistic donations of kidneys, resulting in a reduced supply.[36] A person who is willing to make an anonymous donation of a kidney under the current system may refrain from making such a donation unless that person's designated charity is paid. However, we believe that on balance the supply will increase. People not otherwise inclined to donate kidneys will do so because the Altruism Exchange both allows them to raise money for charity and also makes it more likely that they can ensure that an altruistic beneficiary will receive a kidney from someone else.

Let us turn to the poverty objection to kidney markets and examine whether it can be made against Altruism Exchanges as well.[37] The protection of the poor from exploitation is a key goal of NOTA. The most important characteristic of our three proposals is the requirement that the donor of a kidney act for altruistic reasons—whether in barter exchange for an altruistic act on the part of a benefactor of the kidney recipient, a cash payment by the benefactor to the charitable cause of the donor's choosing, or through a cash payment to an Exchange to be used in a manner the donor chooses. This feature of our proposal minimizes the risk that the poor will be subject to pressures or exploitation, and distinguish it from the for-profit kidney market.

There are several reasons for this. First, the poor are vulnerable to financial pressure to enter into market transactions to generate money to eat, find shelter, and so on.[38] In a for-profit market, the donor might consider selling a kidney to meet these often short-term needs and in doing so incur greater long-term harm.[39] Critics of legal kidney markets cite studies that show that the impoverished who donate kidneys often find themselves with "social, psychological, medical, employment and living problems" after the sale of their kidney.[40] The poor may also be more vulnerable to others who, while purportedly acting on their behalf, may not in fact do so but instead exploit their relationship.[41] Coercive familial relationships may force the weaker members of families (which in many contexts will be women

[36] Sandel, *supra* note 5, at 125, makes this objection to kidney markets.
[37] Because the donor of a kidney receives no direct cash payment, the poverty objection is similarly absent from our proposals for barter and monetary altruistic exchanges that occur outside of a formal Altruism Exchange.
[38] *See, e.g.,* Satz, supra note 5, at 195 (citing "vulnerability" as one factor that may lead to "noxious" markets and writing that "[m]any people object to organ markets precisely because they believe that these markets would allow others to exploit the desperation of the poor.").
[39] Satz views the individual harm to the donor of a kidney particularly troublesome for kidneys donated through a competitive for profit market. *See id.* at 204.
[40] *See* Joseph Hall, *Opening Up The Market For Organs: Support Grows for Selling Body Parts, Donors for Profit Don't Really Benefit* ,TORONTO STAR, http://www.documbase.com/Body-Organs-for-Sale.pdf (quoting Nancy Scheper-Hughes).
[41] Satz refers to these third parties as "weak agents". *See* Satz, supra note 5, at 196.

or children) into donating their kidneys in return for money that goes to the stronger family members.[42]

Our proposals do not give the poor any direct payment for their kidney. Without the possibility of a payment, financial need will not lead the poor to participate disproportionately as donors, or face pressure from third parties seeking to profit financially, under any of our three proposals.[43] As we noted above, if sham charities are possible, they would indirectly provide private financial incentives for people to donate their kidneys and raise the fear that the poor will face disproportionately greater incentives to make such donations often without fully realizing the risks of donation. However, reliance on the Internal Revenue Code's definition of charities under IRC 501(c)(3) will limit the possibility of shams and the vulnerability of the poor to such shams.

The possibility of coercion remains. It is always possible that a potential recipient will coerce a poor person (perhaps a relative) to make a kidney donation to him. This is possible under the current system; the only question is whether the broader range of options made available by our proposal will increase the risk of coercion. This is doubtful.

Second, some people object to the sale of kidneys because they believe that all people should receive basic necessities as a matter of right.[44] If a poor person must sell a kidney in order to obtain basic necessities, then his rights are being violated. We are skeptical of this reasoning. Although it would be better if the state ensured that this person enjoyed basic necessities, in a second-best world in which he does not, depriving him the ability of obtaining them will make him worse off, not better off. In any event, even if this argument is accepted, a poor person who lacks basic necessities is unlikely to give away his kidney for nothing in return. Thus, our proposal should not raise objections in this vein.

Third, a person's financial status may also bear on that person's sophistication and access to information.[45] For purposes of addressing this argument, let us assume that poor people frequently make worse financial decisions than other people do. Thus, the poor will make bad decisions when comparing the

[42] Satz reports on the findings of a study of kidney sellers in India and writes: "The most common explanation offered by wives as to why they and not their husbands sold their organs were that the husbands were the family's income source (30 percent) or were ill (28 percent). Of course … most of the interviews of women were conducted in the presence of their husbands or other family members, so they may have been reluctant to admit to being pressured to donate." Satz, *supra* note 5, at 196.
[43] *See* Satz, *supra* note 5, at 198 ("By contrast, a procurement system that relies on donation is much more likely to have suppliers that come from all classes of people.").
[44] *See id.* at 6 (observing that: "Nineteenth-century social liberals such as T. H. Marshall argued that some specific goods, such as education, access to employment, health care, and votes, are necessary if citizens are to be equals and so should be guaranteed as a right.").
[45] *See id.* at 196 ("The fact that most organ sellers would not recommend the practice suggests that potential sellers would be unlikely to sell a kidney if they were better informed about the outcomes of their sale.").

benefit from selling a kidney (the monetary payment) with the cost (in the form of short-term health risks due to the transplant surgery itself and long-term risks due to the lack of one kidney). Despite the fear of bad decisionmaking, altruistic kidney donations are lawful today. The lack of financial incentives reduces the possibility that the poor will make bad decisions regarding a kidney transplant. While bad decisions are possible even for those making an altruistic donation, the likelihood of a bad decision is much greater when the donor faces short-term financial pressure. Short-term financial pressure on the poor may shorten the time the poor spend considering a decision to donate a kidney. Moreover, regulatory responses exist to address the problem of a lack of information or sophistication regarding transplant decisions aside from simply banning donations—including education and the imposition of waiting periods (to allow the altruistic donor to reconsider her decision).

Fourth, even without a financial incentive, the poor may still disproportionately donate kidneys even in an altruistic kidney exchange. Suppose that everyone, regardless of wealth, has a similar range of charitable preferences. The wealthy, nonetheless, are better able to meet these altruistic preferences without giving up their kidneys due to their wealth. A poor person with a similar preference to donate to a specific charity will be unable to do so unless he or she participates in a monetary altruistic exchange in which the person donates a kidney. We nonetheless are less worried about this form of financial differential between the poor and wealthy. Nothing forces the poor to donate a kidney into the altruistic exchange, and it seems to us unlikely that they will.

Fifth, it is also possible that the wealthy will have a greater ability to make the required charitable payment to acquire a kidney once money is introduced as a medium of altruistic exchange. Thus, poorer *recipients* might be put to a disadvantage under our proposal. But this problem can be surmounted. Insurance companies or the government save the cost of dialysis treatments rendered unnecessary by a successful kidney transplant, and can use this money to make the charitable payment on behalf of poor patients.[46] Moreover, groups of recipients may collectively benefit from obtaining a kidney through a monetary charitable exchange, allowing the group to pool their resources to make the payment, diminishing the amount of money required from any one kidney recipient. In addition, our proposal could complement existing NEAD chains. The major problem with NEAD chains is finding an initial altruistic donor to start the chain and then fixing breaks in the chain if a particular donor-recipient pair reneges. Suppose that on average, one in every 20 links in a NEAD chain breaks due to a particular recipient-donor pair reneging on their promise to donate down the chain. Participants in a chain can each contribute a fraction of the monetary charitable exchange payment amount for a kidney to fill the gap caused by the break (in our example, 1/20th of the cost of a kidney). The NEAD chain organizers can then use

[46] *See id.* at 197 ("Through subsidy and insurance the government *could* seek to make the demand for kidneys independent of the wealth of the buyer.").

this money to obtain the initial kidney as well as keep some money in reserve for the possibility of future breaks on the chain.

Sixth, the existence of a market for kidneys may affect how people interact with one another, and in particular, how the rest of society views those who donate their kidneys. Debra Satz has advanced the view that markets become "noxious" when they undermine equality and thus the underpinnings of a democratic society.[47] To the extent the poor disproportionately donate kidneys for cash payments, this may reinforce the view that the poor are simply "spare parts" for the wealthy, further embedding unequal attitudes about the poor and wealthy in society. A for-profit market for kidneys may also have collateral effects on other markets. Satz cites the possibility that once kidneys are viewed as a financial commodity, lenders may seek to use kidneys as collateral for loans. The poor who would not consider selling their kidneys will thus be put at a disadvantage in the market for loans—placing even more financial pressure on the poor to sell their kidneys.[48] Other opponents of for-profit kidney markets argue that if the U.S. allows a for-profit market then other countries will follow—with less regulated and protected markets. Even if the U.S. provides safe and highly transparent for-profit kidney markets, donors in other countries may not benefit from these protections, leading to even greater exploitation of the poor and the unsophisticated than in today's black markets.[49]

However, an altruism exchange market would not result in these negative effects. Those who donate altruistically will not be viewed as less than equal by others in society, and indeed may be celebrated by others for their self-sacrifice. Once profit motives are removed from the market, collateral effects on the loan market as well as on other countries are also diminished.

A final note to consider is that if our proposals are successful in increasing the supply of kidneys, this increase in supply will reduce the demand for kidneys in the black market. The reduction in demand will reduce the market-clearing price in the black market, leading to fewer poor people making the choice to sell their kidneys as well as diminishing the possibility of coercion on the weaker segments of the population to donate their kidneys. Introducing legitimate charitable institutions as Altruism Exchanges also will eliminate the negative side effects from the participation of criminal organizations in the black market. At a minimum, legitimate charitable institutions will ensure (to the extent the charitable institutions care about maintaining their reputation) that those who donate their kidneys can expect that the money received for their donation will go to the charitable cause of the donor's choosing.

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47 *See* Satz, supra note 5, at 15.
48 *See id.* at 200-201.
49 *See* Jessica Pauline Ogilvie, *The Consequences of a Donor Kidney Market*, L.A. TIMES, Mar. 28, 2011 (reporting the views of Dr. Francis Delmonico, director of renal transplantation at Massachusetts General Hospital).

3.5 Exchanges With One-Sided Altruism

So far we have considered cases of two-sided altruism. Donor 1 donates a kidney (or earmarked cash or other charitable benefit) to Recipient 2. Recipient 2 is the altruistic beneficiary of Donor 2. Donor 2 donates a kidney (or other charitable benefit) to Recipient 1, who is the altruistic beneficiary of Donor 1. These donations could take place through an Altruism Exchange; but the important point for present purposes is that the original donor acts altruistically and the ultimate recipient benefits from the altruism of another person.

Consider a variation, which we will call one-sided altruism. There are two versions. In the first version, which we call sell-side altruism, Donor 1 is linked to Recipient 1 by altruism, but Donor 2 acts for himself. For example, Donor 1 donates a kidney to Donor 2, and Donor 2 reciprocates by donating, say, bone marrow, to Recipient 1. In the broader case, Donor 1 donates a kidney to Donor 2, and Donor 2 provides money to a charity chosen by Donor 1, or to an Altruism Exchange that directs the money to a charity chosen by Donor 1. The transaction is shown in Figure 7.

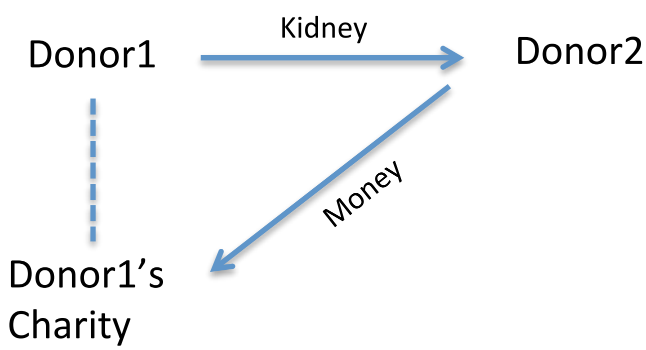

Figure 7

This is one-sided altruism. Donor 1 is motivated by altruism; Donor 2 is not motivated by altruism but by self-interest, whether he donates bone marrow or cash to the third party. Thus, Donor 2 is effectively buying a kidney, but Donor 1 is not selling his kidney: he is donating his kidney.

Does a one-sided altruistic transfer offend moral sensibilities? The answer depends on one's theory for banning the commodification of kidneys. If the reason is that poor people may be coerced or exploited, then we should not object to transactions where the kidney donor receives only a charitable benefit: poor people will not, except in highly unusual cases, voluntarily donate their kidneys when someone else receives the cash or other charitable benefit. This system, therefore, provides no greater danger to the poor than two-sided altruism.

The next objection is that people become a bundle of "spare parts"; that human dignity is undermined. Here, again, the donor of the kidney does not act any differently from the way the donor acts in the two-sided altruistic exchange. Accordingly, if the commodification concern is focused on the motivations and behavior of the donor, then one-sided altruism is no more objectionable than two-sided altruism. On the other hand, if the focus is on the recipient of the kidney (Donor 2), it is true that he gave money for it, although the money is to be used for altruistic purposes, which is not the case when one buys spare parts from an automobile supply store. People will react differently to this scenario; at a minimum, it is not as vulnerable to the commodification criticism as a regular sale would be.

By contrast, consider the second version of one-sided altruism, which we call buy-side altruism. Here, Donor 1 accepts money from Donor 2, and gives his kidney to Recipient 2, who is linked to Donor 2 by altruism. Figure 8 shows the transaction.

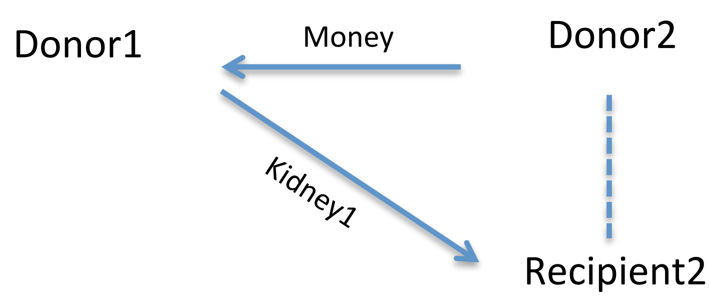

Figure 8

In this transaction, Donor 1 is simply a kidney seller who obtains a financial gain from the sale, while Donor 2 buys on behalf of another person. Both the poverty and commodification worries come into play here. If Donor 1 is poor, then he will be tempted to sell his kidney in return for money. At bottom, this straightforward sale of a kidney, even if to an altruistic buyer, may create a fully functioning market in kidneys that critics of commodification will find objectionable.

3.6 How Many People Are Likely to Participate?

A question that we have heard on multiple occasions is whether it is plausible to think that our proposals will result in a meaningful increase in the supply of kidneys. Who will be willing to exchange a kidney in return for the right to allocate someone else's money to a charitable beneficiary? To answer this question, we consider two separate cases that we have so far considered together: recipients which are charitable organizations and recipients who are children (or other relatives or close friends).

Charities

Charitable giving is a significant phenomenon in the United States. In 2011, 117 million households collectively donated $300 billion to charity.[50] Some individuals make enormous charitable contributions. For example, in 2008 the entrepreneur Hansjörg Wyss donated $125 million to underwrite a new biological engineering institute at Harvard University. A group of billionaires, including Bill Gates and Warren Buffet, have promised to contribute half their wealth to charities. Whatever the motivation—pure altruism, reputation, or something else—the impulse to give to charitable organizations is strong and widespread.

The charitable impulse extends beyond donations of money. Many people volunteer in soup kitchens, build houses for the homeless, and provide other services. Lawyers and doctors frequently offer their professional skills pro bono. Significant numbers of people donate blood despite the discomfort. And every year between 100 and 200 people donate a kidney to a complete stranger.[51]

The question we must answer is how much that supply of kidneys would increase if donors were "paid" in the form of contributions on their behalf to charities that they care about. We answer this question in steps. First, we ask what the supply of kidneys would be if people could be paid in cash. Second, we ask how that supply would be affected if their compensation could take only the form of charitable donations to causes they care about.

The first step is simply that of deriving a supply curve for kidneys in a for-profit market. We provide here a back-of-the-envelope calculation—designed only to show how the analysis can be performed and to give a very rough estimate about the likely effect of our proposal on the supply of kidneys. As noted above, 100 to 200 people yearly donate their kidneys to strangers in return for nothing at all; let us suppose 100. This statistic allows us to anchor the left side of the supply curve. Now suppose that if there was a legal market in kidneys, it would clear at, say, $100,000, which would supply 10,000 people per year.[52] Finally, suppose that the supply curve is linear. If this is the case, then the number of kidneys supplied will be roughly the price divided by 10 plus 100. For example, at a price of $2000, 300 kidneys would be supplied. At a price of $30,000, 3,100 kidneys would be supplied.

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[50] *See* Giving USA and the Center on Philanthropy at Indiana University, The Annual Report on Philanthropy for the Year 2011 Executive Summary (2012).

[51] See supra note __.

[52] We currently do not have a basis for these figures, so they should be considered hypothetical only, but they are loosely based on a sense of what the market might look like, based on information about illegal markets and the need for transplants.

The second step is to monetize the utility that a person obtains from a charitable benefit. To simplify the problem greatly, imagine a person who wishes to donate $2,000 to a charitable cause. Such a person should be indifferent between making that donation himself and having an Altruism Exchange make that donation on his behalf. Thus, the person should be willing to donate a kidney to the Altruism Exchange if he would be willing to sell his kidney for $2,000. Selling his kidney gives the person $2,000 that he can use to donate directly to a charitable cause; donating a kidney to the Altruism Exchange results in a $2,000 donation by the Altruism Exchange on behalf of the kidney donor to the same charity. We treat the two as equivalent from the perspective of the kidney donor. At the $2,000 price, according to our supply curve, only 300 or so people would be willing to donate at the price.

But, of course, the "price" of a kidney is likely to be much higher—as high as $100,000 and maybe much higher than that. A person who wishes to donate $2,000 to a charity in one year may wish to donate another $2,000 to the same (or different) charity the next year and so on. A person who donates $2000 per year might regard this $100,000 payment as equivalent to 50 such donations over the next 50 years (ignoring the time value of money). The donor might thus think of a kidney donation as a way of liquidating his future charitable obligations in one fell swoop. To the extent a large number of people have a preference to donate $2,000 per year to various charities (and thus would value a charitable payment that would equal the sum of these donations highly), the number of donations in our Altruism Exchange proposal could be very large.

How large is the number of potential donors will depend on the existing number of people who have a preference for making charitable donations. We believe that a sufficient number of people today have a preference to donate $2,000 per year to charities to provide the same market clearing number of kidney donations as in a for profit market. Even people who do not ordinarily wish to donate $2,000 per year to charities (but instead have a preference to donate some amount less than $2,000) may respond to the monetary incentives from our Altruism Exchange proposal. Imagine a demand curve for "coupons" that count as a one dollar contribution to one's favorite charity. A person who already donates $1,000 per year to charity would be indifferent between donating $1,000 in cash and donating $1,000 in coupons, and so would treat $1,000 in cash and $1,000 in coupons equivalently. Suppose we offer this person another $1,000 in coupons (bringing to total to $2,000); how much would he be willing to pay for them? Certainly, less than $1,000, and then the question is what discount that person attaches. Presumably, he will pay less per coupon as the number of coupons increases. If one can derive the effective price of such coupons (which one may be able to do by using data on matching grants, where people pay $1 to make a $2 contribution), then one will be able to make a more precise prediction as to the effect of the Altruism Exchange on kidney donations.

Children and Other Close Relations

Most donors donate kidneys to blood relations. In 2011, 512 kidneys were donated to a blood-related parent; 883 kidneys were donated to a blood-related child; and 827 kidneys were donated to a sibling. Spouses also donate to each other—686 such donations were made in 2011.[53]

At first sight, it might seem that such people would not increase their rate of donation under our proposals. They seek to donate their kidneys to their loved ones, and are unlikely to use an Altruism Exchange so that they can instead donate their kidneys to strangers.

However, there are two reasons why our proposal would likely increase the supply of kidneys even among this type of person. First, the Altruism Exchange enables those who care about a potential kidney recipient to bank altruistic dollars for use in the future. Imagine for example a parent with a young child who has a disease that will likely require him to need a kidney transplant in the future, perhaps after he has grown up. Most parents would be willing to give up their kidneys to save our children from dialysis. But there are barriers to making this transfer. In particular, it is by no means certain that when the disease eventually hits, the parent will still be able to donate, especially in a reciprocal exchange for someone else's kidney. The parent may be too old or ill to supply a healthy enough kidney to the child, or indeed may be dead.

The Altruism Exchange would enable a parent to donate a kidney today in return for a specific amount of altruism dollars. The parent can then bank these dollars in the Altruism Exchange for use in the future for a charitable cause—including the purchase of a kidney for donation to the parent's child when and if the child eventually needs a kidney donation. Let us assume, conservatively, that there are 1,000 parents in the U.S. who every year find out that their children have some form of kidney disease and as a result are at high risk of requiring an eventual kidney transplant. If each of these parents donates a kidney immediately to ensure the availability of a kidney donation for their children in the future, that increases the supply of kidneys today by 1,000. That would be a more than a 10% increase in the supply of kidneys available for transplant. Now suppose that the child has only a 50% chance of actually facing kidney failure and the need for a transplant. This means that only 500 of these kidneys will require reciprocal donations. The other 500 kidneys donated today effectively become purely altruistic donations that will not require an eventual reciprocal donation in the future—increasing the total supply of kidneys available for those without a close relative friend or relative willing to donate a kidney. Moreover, even for the 500 kidney donations today that will require eventual reciprocal donations, because these donations are in the future, cures or other medical advances that delay the need for a kidney donation may be discovered in the interim, further expanding the supply of kidneys available for donation without the need for reciprocation.

[53] See supra note __.

Second, we might consider enabling a parent to donate his kidney to an Altruism Exchange in return for other (non-kidney) transfers to his child or other close relatives. Suppose, for example, that the child needs a liver transplant. The parent cannot donate his liver (or a piece of it) because he suffers from liver disease but his kidney is healthy. He donates the kidney to the Altruism Exchange in return for a promise by the Exchange to find a liver for the child. It would be a strange sort of organ-fetishism if we allowed people to exchange a kidney for a kidney but not a kidney for a liver.

But the exchange need not be limited to transplants. Suppose that the parent donates his kidney to the Altruism Exchange in return for (1) funds that are used to finance surgery needed to remove a cancerous tumor from the child's body; (2) funds that are used to finance the child's college education; or (3) funds that would be used to finance an adult child's dry-cleaning business. People might become uneasy as we move from (1) to (3), but even if only exchange (1) or (2) is permitted, the lesson is clear. Parents' strong altruism for their children can be harnessed, so as to dramatically increase the supply of kidneys, while also benefiting children who do not need kidney transplants but have other urgent needs

Other Considerations

But suppose we are wrong and creating a broadened definition of altruism exchange does not significantly increase the supply of kidney donations. Establishing a formal Altruism Exchange would still enable a person willing to donate a kidney to a friend or relative to donate that kidney to a stranger in return for a promise that the Exchange would ensure that someone else in the near future would donate a kidney to the friend or relative. The Altruism Exchange would solve two significant problems that limit the effectiveness of kidney exchanges and kidney chains existing today: the danger that a donor will renege on her promise to donate, and the difficulty of matching people.

Under our proposal, the Altruism Exchange would guarantee a donation to the donor's intended recipient as soon as a matching kidney became available. Even if another donor reneges on her promise to donate, the Altruism Exchange can simply assign the next available and compatible kidney to the intended recipient. Paired donations, unless simultaneous, cannot guarantee the successful completion of the exchange. A significant constraint on the size of NEAD chains is that they are susceptible to a donor reneging on her promise, breaking the chain.[54]

Altruism Exchanges also improve on matching compared with existing kidney donations. Paired donations face a difficult matching problem. Not only does the donor from the first pair need to match the recipient from the second pair but the donor from the second pair much match the recipient from the first pair. The probability of a dual match is necessarily lower than a single match. Moreover,

[54] Healy & Krawiec, *supra* note 21.

absent an organized place for potential donor-recipient pairs to exchange medical information and find one another, search costs are high for matches. Recent innovations, including MatchingDonor.com, discussed above, may help reduce the search costs. Nonetheless, the dual matching problem remains with paired donations.

NEAD chains reduce matching costs relative to paired donations in that the serial matching requires only that the donor in one pair match the recipient in a subsequent pair in the chain. Matching is nonetheless constrained in NEAD chains. A NEAD chain relies on a serial matching of the specific kidney that is available in the chain with potential donor-recipients. Potential donor-recipients that do not match the specific kidney available in the chain will not participate in a specific NEAD chain until their specific matching kidney appears—which may not occur until far into the future if at all. In comparison, the pool of donors in an Altruism Exchange allows more readily the matching of a particular recipient with an existing member of the pool, inducing the donor paired with the recipient to add her name to the pool of donors (which is turn can help facilitate more matches into the future).

4. Legal Implications

We have addressed in passing but have not yet fully confronted the question of whether any of our proposals are lawful under existing statutes, and, if not, what legal changes would be needed so that they could be put into effect. Here we turn to this question.

Existing law provides that a person may not transfer (sell) or receive (buy) a kidney in return for valuable consideration, but that a paired kidney exchange does not violate this prohibition. Thus, Donor 1 does not legally receive consideration when he transfers his kidney to Recipient 2, even though this transfer is in exchange for Donor 2 transferring her kidney to Recipient 1.

All of our proposals would violate this statutory scheme, at least if it is literally interpreted. If Donor 1 donates his kidney to Recipient 2 so that Donor 2 donates charitable activity or charity-earmarked money to Recipient 1, Donor 1 receives valuable consideration because charitable activity and charity-earmarked money are not kidneys.[55] It follows that an Altruism Exchange would also not be allowed to transfer or receive kidneys.

It is possible to argue that our proposals are consistent with the spirit of the statutory scheme, which seems directed toward allowing kidney transfers where

[55] One should not confuse this case with a distinct setting, where a donor promises money or other benefits to a charity in return for nothing (or something minimal like recognition). Courts generally hold in this case that the donor does not receive consideration. In the text, we are addressing a different case, where the donor makes a transfer to a charity in return for someone else making a transfer to a charity.

each side (and possibly one side) is motivated by altruism. However, we doubt that a court would read the statutory scheme this broadly.

Thus, we would amend the statutory scheme so as to allow altruistic exchanges. The amendment would be straightforward. It would provide that when a person donates a kidney in return for a commitment by another person (or institution) to engage in charitable activity (including the donation of charity-earmarked funds), the latter person's behavior does not constitute valuable consideration. Similarly, when a recipient commits to engage in charitable activity (including the donation of charity-earmarked funds) in return for a kidney, the recipient's activity does not constitute valuable consideration. This would legalize two-sided altruistic transfers.

To legalize one-sided altruistic transfers, Congress would also need to provide that a transaction involving the transfer of a kidney is lawful if at least one of the parties does not receive or transfer valuable consideration (as defined above). Thus, if Recipient's Benefactor pays Donor to donate his kidney to Recipient, the transaction is legal because Benefactor does not receive consideration, although Donor does.

5. Conclusion

Advances in medical technology in recent years have made kidney transplants increasingly effective as a way of extending life spans and improving the quality of life of those who would otherwise need dialysis. As the demand for kidney transplants has increased, however, supply has been unable to keep up. In theory, a market for kidneys could bring supply and demand into equilibrium, but a market in human organs brings a number of potential problems with it—problems that have caused Congress to impose stringent legal restrictions on transfers of organs. Congress has, however, shown a willingness to permit organ exchanges where the exchanges are driven by altruism.

In order to exploit this opening, we propose that donors be permitted to donate kidneys in exchange for commitments by recipients or their benefactors to engage in charitable activity or to donate funds to charities chosen by donors. By enabling donors to donate kidneys in exchange for other charitable benefits, our proposal should increase the supply of kidneys as well as other charitable benefits. In effect, we are expanding the range of charitable giving by permitting people to convert a kidney donation into charitable benefits that they care about, where they are not otherwise inclined to donate a kidney to a particular person.

One can see this point in another way. Imagine a society in which people were not permitted to donate money to charitable causes but could provide only goods (such as food to soup kitchens) or services (such as tutoring of poor children). Clearly, there would be some charitable activity but not as much as we observe today. When the society starts permitting people to make cash donations, this makes it possible for people to fund charitable activity for others. A person who does not have any spare food, or the time to engage in tutoring, can donate money to a charity, which uses the money to buy food or pay a professional tutor. (We could imagine moralists complaining that the introduction of cash would commodify charitable activity but we are fortunately past that stage.) Our proposals further increase the range of opportunity. Under our proposals, donors can donate not just cash, but also kidneys.

But there are limits to how much this approach can accomplish. Those engaged in one-on-one barters and cash altruistic exchanges must, among other things, contend with the risk of non-performance. How can a donor of a kidney be assured that the recipient or those who care for the recipient will honor their promise to build a school after the kidney has been transplanted? Alternatively, if those who care for the recipient build the school first, how can they be assured that the donor of the kidney will not renege on the donation? Our third proposal introduces Altruism Exchanges to help ensure that promises both on the part of kidney donors and on the part of recipients and those who care about the recipients are kept. If one kidney donor reneges on her promise to donate a kidney, the Altruism Exchange can ensure that the intended recipient of the kidney will obtain the next available compatible kidney. The assurance of performance, in turn, will help induce greater participation among donors and recipients in the Altruism Exchange. By bringing together a large number of potential kidney donors and recipients, the Altruism Exchange also increases liquidity and improves the matching of kidney donors with compatible recipients able to meet the altruistic preferences of the donors.

Because transfers of kidneys and payments to charitable causes through an Altruism Exchange are based on altruism, the Altruism Exchange avoids concerns about commodification and coercion of the poor. Of course, a market for kidneys that relies on profit motive would generate a far greater supply of kidneys than our altruism-based proposals. Nonetheless, our proposals could save many lives.