10. Allocating Organs
Altruism and Reciprocity

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1. Introduction

Would you give one of your kidneys to a stranger? This is a title of the online version of the article published in the *New Scientist* on June 21, 2017.[1] The article describes the new trend of increasing numbers of living donors who are giving their spare kidney to save the life of someone they have never met. There are more such donors than one would have expected, but they are still far from enough. It was initially expected that organs from deceased donors (cadaveric donors) would be able to satisfy the demand for transplant organs. However, because the gap between demand and supply of transplant organs did not close, it soon became clear that organ donation would also have to be extended to living donors (Munson 2007). Thanks to advances in the development of effective immunosuppressive drugs and tissue cross matching tests, transplant organ donation from genetically unrelated donors became medically feasible. In directed donation an organ is donated to a specific individual – a family member or friend, in contrast to non-directed donation that anonymous stranger is a donor of organ to any person who needs it (cf. Veach and Ross 2015; and chapter 8 in this book). Such directed living organ donations have been extended from biologically related family members (parent, sibling, offspring, grandparent, grandchild, aunt, uncle, niece, nephew) to emotionally related persons (e.g. spouse, in-laws, adopted parent or child, friend) (see chapter 7 in this book).

While donating a kidney to a family member or a loved one is understandable, giving it to a completely unrelated stranger might seem suspicious. Until recently, physicians, ethicists and policy makers were reluctant to support unrelated living organ donations. As Gohh et al. note, such donors were considered to be "an impenetrable taboo" (2001: 619); but this attitude is slowly changing. Some countries have relaxed their organ procurement policies to also allow non-directed organ donations, but such transplantations from living donors still represent only a marginal number of living donations (see chapter 8 in this book).

1 https://www.newscientist.com/article/mg23431310-900-would-you-give-one-of-your-kidneys-to-a-stranger/#ixzz6IdddqBLN. (accessed March 31, 2020).

In last two decades living donors have become an important source of transplant organs. The average worldwide proportion of live kidney donors to all kidney donors (live and deceased) is about 42 per cent (for comparison, in the USA it is 28 per cent, in the European Union 20 per cent) (Domínguez-Gil/Matesanz 2018: 18, 31, 46). In countries with a low cadaveric organ procurement rate, and which have difficulties raising it (for example, due to unwillingness to change from an opt-in to an opt-out procurement policy), the increase in living donations is crucial. In countries like Israel, the Netherlands, the UK and the USA, living kidney donations have become the most important alternative to deceased kidney donations.

People who risk their own life to save the life of another are generally considered to be heroes. Accordingly, awareness-raising campaigns often use heroic images and narratives when appealing to ordinary people to become live organ donors. As Hansen et al. have pointed out in their analysis of posters used in such campaigns, the moral appeal of heroic donors is that they are "elevated to the level of a superhero in everyday life" (2018: 6). Images used in such campaigns usually directly refer to the comic hero Superman. The superhero image and narrative have also been recently used in the Europe-wide awareness-raising campaign organized by the European Union during the 2018 "European Day for Organ Donation and Transplantation". The leading slogan of the campaign was "Be ready to save lives, become a superhero!" and it referred to popular superheroes.[2]

Since the gap between demand and supply of transplant organs is permanently high, it is reasonable to ask whether appealing to heroic organ donors is enough to solve the shortage of transplant organs. While one might argue that all is needed is to improve the efficacy of campaigns to increase donor numbers, some commentators are proposing more radical changes to the whole philosophy of organ donation. After six decades of experience with the current organ procurement system, a growing number of voices argue that the policy of altruistic donations has reached its limits; it is too idealistic and needs to be replaced with a more realistic model. According to these proponents, most of whom are economists, the organ market should sooner or later reach an equilibrium between the demand and supply of transplant organs, just like any other commodity (Nelson 1991; Thorne 2006; Beard et al. 2013).

However, since the early days of transplantation practice, the world-wide attitude have been almost universally against the commercialization of transplant organs. This attitude does not seem likely to change in foreseeable future.[3] Indeed, in recent years the stance against the commodification of human organs has been strengthened in the form of measures against organ trafficking at the national as well as international level, while arguments that a legal organ market would eliminate the black market in human organs have not been widely accepted (see chapter 11 in this book).

The debate about the finding new ways to solve the inefficiency of the altruistic model is often framed as a dichotomy or moral dilemma, in which there is a choice between a moral but ineffective altruistic model on the one hand, and a morally con-

2 https://www.edqm.eu/en/news/be-ready-save-lives-become-superhero-say-yes-organ-tissue-and-cell-donation; https://video.repubblica.it/dossier/lucca-comics-2019/lucca-comics-chiese-a-11-anni-di-essere-assunto-da-magic-oggi-e-il-designer-delle-carte-da-gioco/347231/347814?ref=vd-auto&cnt=1. (accessed January 16, 2020).

3 The only exception is Iran, where financial incentives for kidney donation are officially permitted.

tested but (presumably) effective commodification model on the other. In the words of Gillespie: "A vocal alternative to the status quo policy of altruism is a market-based approach: pay people for their organs." (2019: 101)

In my view, it is misleading to frame the debate on organ shortage as a simple dichotomy between altruistic and non-altruistic alternatives, where the non-altruistic alternative usually means accepting some form of payment for transplant organs, including an organ market.

In the following, I explore the possibility of organ donation based on indirect reciprocity, which might overcome the conceptual deadlock between altruism and commodification. My main goal is to ethically justify an organ donation policy in which donations are indirectly reciprocated. I focus on kidney exchange transplantations, whereby, to overcome biological obstacles, donor/recipient pairs exchange kidneys. Kidney exchange is considered to be the most important innovation in living organ donations in recent years. In general, kidney exchanges are presumed to be fully compatible with the altruistic model: all donors involved in kidney exchanges seem to be altruistically motivated. In contrast, I argue here that kidney exchange is not compatible with the altruistic model, since the motivations of donors cannot be considered to be (purely) altruistic, and in fact indirect reciprocal relations are set up between donors and recipients. I further argue that kidney exchange might nevertheless be ethically justified if indirect reciprocity is morally accepted.

In the following, I begin by describing the background to the organ shortage crisis and the importance of living organ donations, in particular kidney exchange programs. This is followed by a brief overview of kidney exchange schemes. Next, I revisit and analyze the ambiguities of altruism, reciprocity, exchange, and market as these concepts are used in organ donation discourse. Such analysis will prepare the ground for further analysis of kidney exchange as an example of indirect reciprocity. Finally, I present my argument that kidney exchange can be ethically justified on the condition that indirect reciprocity is accepted as an additional moral principle alongside altruism.

2. Transplant Organ Shortage and Kidney Exchange Innovation

2.1 Chronic Shortage of Transplant Organs

Over the past fifty years, the transplantation of human organs has become a global practice. From a medical point of view, it is a great success story; the only limiting factor is the number of available transplant organs. Unfortunately, the disproportion between organ supply and demand, especially for kidney transplantations, continues to widen. Even though the number of transplantations has increased in recent years, the number of transplant candidates has increased even faster. For example, in the US between 1991 and 2017, the number of transplants has increased by 121 per cent and organ donors by 137 per cent. However, over the same period the number of people on the waiting list has increased by 396 per cent. As of January 2019, there were 113.000 people on the waiting list, with 20 people each day waiting for a transplant.[4] The situa-

4 https://www.organdonor.gov/statistics-stories/statistics.html (accessed June 29, 2020)

tion is similar in Europe: in 2016 over 142.000 patients in the Council of Europe member states were registered on a waiting list (an increase of about ten per cent compared to 2013); every day, 19 patients die in Europe waiting for a transplant.[5]

In order to increase the number of available organs, health care professionals have become more open to accepting living donors, although they were initially reluctant to follow this path because of the specific ethical difficulties related to living donors. Living donors can donate a kidney, a liver lobe, a pancreas segment, and recently a lung lobe. The highest demand is for kidneys, which together with liver represent about 88.2 per cent of all solid organ transplantations (kidney 64.9 per cent and liver 23.3 per cent). Since 2000, the global number of living kidney donations increased rapidly from 7.676 to 32.085.[6]

It is broadly accepted that the shortage of available organs for transplantation is chronic. However, not everyone agrees that the current altruistic model has reached its limits and must be replaced. Defenders of the current system of organ procurement argue that full potential of the altruistic model has not been reached, and that there is a lot of scope to improve its efficiency. For example, Jawoniyi et al. (2018), based on their systematic review of literature on the organ donation/procurement from deceased donors published between 2005–2015, concluded that if the web of factors responsible for limiting the procurement of transplant organs was adequately addressed, there would be enough organs to meet all transplantation needs. Of the various factors they identified in their meta-analysis, the most important were health care professionals' attitudes toward, and experience of, the organ donation and transplantation process. However, Spain, which for years has had the highest rate of organ procurement and is referred as a model for other countries to follow (the so called Spanish model), is far from being self-sufficient in organ supply. This probably illustrates the limits of altruistic model for the cadaveric donation scheme (Matesanz et al. 2017).

2.2 Kidney Exchange Schemes

Kidney paired donations, also known as kidney paired exchange or just kidney exchange (KE), are probably the most important recent innovation in the policy of organ procurement, and they have already significantly increased living kidney donations over the last two decades (Veale et al. 2009). In principle, KE is ingeniously simple: put together emotionally connected pairs of potential donors and recipients, who are deeply motivated but unfortunately immunologically incompatible, and arrange them in such a way that a donor from one donor/recipient pair donates a kidney to an unrelated but immunologically compatible recipient from another such donor/recipient pair. The idea of KE was already discussed as early as the 1970s. In 1997, Ross with collaborators proposed a pilot study of the clinical and ethical aspects of paired kidney exchanges, which stimulated discussion and later implementation of KE in transplantation practices (Ross et al. 1997).

5 https://www.edqm.eu/en/news/european-day-organ-donation-and-transplantation-eodd-2018-awareness-campaign-starts. (accessed March 3, 2020)

6 http://www.transplant-observatory.org/download/2017-activity-data-report/ (accessed March 3, 2020.

The simplest form of KE is a kidney swapping between two donor/recipient pairs (so called two-way exchange): a donor from each pair provides a kidney to an immunologically compatible recipient the other pair. However, kidney exchange can also be arranged between more than two pairs, for example between three and four pairs (three- or four-way exchange). These are examples of closed KE schemes because they involve a closed circle of kidney exchanges – the donor from the last donor/recipient pair donates kidney to the recipient from the first pair. In practice, the number of donor/recipient pairs that can be arranged in this way is quite limited.

The first kidney exchange in the world was performed in South Korea in 1991, and three- and four-way exchanges began there in 1995. In 1999, the first kidney exchange was performed in Europe (Switzerland), and in 2000 in the USA. In 2002, the Paired Donation Consortium was set up in the USA, and it started to organize kidney exchanges on a bigger scale between transplant programs across the country (Wallis et al. 2011).

An important step towards a more efficient form of kidney paired exchange was developed by Montgomery et al. under the title "domino paired kidney donation" (2006: 419) or kidney exchange chain (KE chain), which was later implemented with a great success in the USA. According to this scheme, a non-directed stranger donor is matched with pools of incompatible donor/recipient pairs which otherwise would not be able to exchange kidneys among themselves. The unpaired stranger donor (also called altruistic donor) gives a kidney to a recipient in the first incompatible donor/recipient pair; the donor from that pair then donates a kidney to a recipient in the next incompatible donor/recipient pair, thus initiating a chain of matches between incompatible donor/recipient pairs. The domino effect multiplies the number of transplants. The donor from the last matching donor/recipient pair in this domino sequence could donate to the first eligible recipient from the waiting list, which would close this matching sequence (closed KE chain). Alternatively, the altruistic stranger donor could become a bridge donor who later initiates a new KE chain.

Bridge donors agree in advance to donate his/her kidney, not when his/her loved one in the incompatible pair receives a kidney transplant, but later to a recipient in another incompatible donor/recipient pair: this is the first pair in the new chain KE. The bridge donors 'bridge' or 'link' two distinct KE chains, merging them into a larger chain. This innovative variation, called 'NEAD' (never ending altruistic donor) chain, was first proposed in 2007 (Rees et al. 2009). Bridge donors could also be altruistic stranger donors (unrelated non-directed living donors)[7] who instead of donating a kidney to a waiting list may link two domino chains, or they may link unexpected breaks in a chain, as when a matching donor from incompatible donor/recipient pair decides to withdraw (see also chapter 8 in this book). The utilization of bridge donors has dramatically multiplied the number of transplants performed. Using bridge donors, donation chains can theoretically be unlimited ('never ending'); in practice, the longest transplantation chain to date has surpassed 100 kidney donations (Cook 2018).

7 According to a new classification proposed by ELPAT (Ethical, Legal, and Psychosocial Aspects of Transplantation, a section of the European Society for Organ Transplantation), such donations are better referred to as unspecified donations (Dor et al. 2011).

KE chains have attracted widespread media coverage, including a front-page story in the New York Times[8] and nation-wide prime-time broadcasting on TV promoting the idea of KE to general public. According to Healy and Krawiec, kidney exchange, and in particular NEAD chains, "in some ways [NEAD chain] resembles a form of *generalized exchange* (italics in original) an ancient and widespread instance of the norm of reciprocity [...] as the obligation to 'pay it forward' rather than the obligation to reciprocate directly with the giver." (2012: 103) However, they argue it differs in some important details from generalized exchange: (for example, a NEAD chain is open, it does not cycle back, it occurs between pairs rather than individuals, and it is carefully organized instead of spontaneously emerging). Importantly, in their analysis of NEAD, Healy and Krawiec do not treat kidney exchange as a market exchange but rather as a social exchange phenomenon, and they point out that "imaginary of solidarity and collective commitment generated through a chain of gifts has been important to the success of NEAD chains" (ibid: 104). If two persons are involved in reciprocal interactions, we talk about dyadic reciprocity. But if interactions involve a third party, either a number of people in a complicated network of reciprocal interactions, or an institution (e.g. a health insurance company), we talk about indirect reciprocity in organ donation (for indirect reciprocity mechanisms, see Ferguson 2015: 214–215).

The latest innovation in kidney exchange is the global kidney exchange (GKE) program (Rees et al. 2017), which extends the pool of incompatible donor/recipient pairs to the developing world. In general, GKE's philosophy is designed to overcome both immunological and poverty barriers in transplantation. There are many end-stage renal diseases in developing countries where no funds for KE programs are available to patients even though there are potential donor/recipient pairs. Two possible GKE schemes have been suggested. First is a simple two-way kidney exchange between two incompatible donor/recipient pairs: a donor from a developing-world pair donates a kidney to a recipient in a pair from developed world and vice versa. Up to that point, this would be an international kidney exchange. However, in addition, transplant and long-term care for the kidney recipient in the developing-world pair is paid for by funds from developed country. This produces an apparent win-win situation: in the developed country, the health care insurance system saves money because transplantation is cheaper than long-term dialysis; in the developing country, the recipient would not have been able to receive a transplant kidney even if they had an immunologically compatible donors, because without extra funding the local health care insurance does not cover transplantation and post-transplantation health care costs. The second mechanism of GKE schemes is when a donor from a pair in the developing world initiates a KE chain by donating a kidney to a recipient in a pair in developed world (Rees et al. 2017). Thereby, the health insurance funds of all involved recipients can be combined to finance the transplantation costs for the recipient in the pair from the developing world. However, GKE is highly controversial because it involves a transfer of finances from incompatible donor/recipient pairs in developed countries to donor/recipient pairs in developing countries.

8 https://www.nytimes.com/2012/02/19/health/lives-forever-linked-through-kidney-transplant-chain-124.html?_r=0 (accessed June 29, 2020)

3. Altruism and Reciprocity: Theoretical Foundations

3.1 Prolegomena to All Models of Organ Donation Based on Reciprocity

The altruistic model of organ donation is often said to be chronically ineffective and therefore should be replaced by some model of organ selling. This implies there are only two options: either the organ donor acts purely altruistically, or they receive money to donate. I consider such a dichotomy to be misleading and harmful to efforts to increase donor numbers.

Instead, I suggest a third alternative regarding how to deal with the organ shortage – one based on indirect reciprocity. Such a model would not be altruistic (although it would incorporate altruistic organ donation), but neither would it be based on commercialization of organ procurement. The idea of using reciprocity to motivate organ donation and thus dramatically increase donor numbers is not new. It is based on a model of human behavior, which assumes that organ donations will significantly increase if the organ procurement policy is set up in such a way that it is in a person's self-interest to commit to organ donation.

For example, Nadel and Nadel (2005) proposed that the US system of organ procurement be changed so that those who committed to donating an organ after death (the USA has an opt-in system) would receive priority on a waiting list, or live kidney donors would also receive priority if they later needed a transplant organ. The major complaint about a reciprocity policy was already formulated for a similar reciprocity proposal a decade earlier by the US federal organ procurement authority (UNOS): it inherently compromised the altruism of the existing organ procurement policy. Nadel and Nadel counter that "priority policy would actually represent a form of 'reciprocal altruism'" (ibid: 320), a concept used in both evolutionary biology and experimental economics. However, their proposal has never been accepted.

Several similar policies based on reciprocity have been suggested. For example, Kolber (2003) has suggested a model of priority incentives for opt-in system of deceased organ donation. According to this proposal, registered adult organ donors are given some priority should they need an organ themselves. Such a system has been implemented in Israel (Lavee et al. 2010; Zaltzman 2018). A more radical version of this model has been suggested by Tabarrok (2002: 107), who has dubbed it "no-give, no-take". According to this model, signing the organ donor card would be a necessary condition for entry into the pool of potential organ recipients. Critics have argued that such a system is in fact equivalent to buying organ transplantation insurance.

The vast majority of proposals that involve some reciprocity for organ donations have not been implemented (Israel's abovementioned priority system is one of few exceptions). The main reason is that they challenge principles and values of organ donation at a much deeper level than their proponents may realize. At first glance, it may seem that such policy proposals are just pragmatic compromises between the two extremes of altruism and commercialization; it should therefore be enough to defend them on the grounds that they will save more lives. Why then have proposed reciprocity policies not been welcomed even though they promised higher rates of organ donation without the introduction of an organ market? Answering this question requires re-examination of a founding principle of the altruistic model and carefully analysis of the relationship between altruism, reciprocity, and commercialization. I believe that

many proposed reciprocity policies have failed because they have not included such analysis, and furthermore they use terms such as altruism, reciprocal altruism, reciprocity, exchange, and market ideologically and imprecisely. In what follows, I analyze kidney exchange from the indirect reciprocity and altruism perspectives. This will prepare the ground for my argument that KE cannot be ethically justified within the framework of altruistic model.

3.2 Genuine Altruism, Quasi Altruism, and Reciprocity

Let us begin by examining the relationship between altruism and reciprocity. What is obvious from the start is that the boundaries between altruism and reciprocity are blurred, as are the boundaries between reciprocity and commerce, as we will later see. The understanding of altruism in organ donation has been confusing from the very beginning. In his seminal book *The Gift Relationship*, Titmuss (1970) refers to blood donation as a form of altruistic gift-giving: a selfless behavior without any expectation of repayment, in contrast to the blood procurement policy in the USA, which was partially based on blood purchasing. Since that time, the gift metaphor, as a synonym for non-commercial altruistic giving, has dominated narratives on blood, and later organ procurement policies (Childress 1986). Unfortunately, Titmuss conflates two different meanings of the gift term (Sykora 2009): the gift as a voluntary act of pure generosity (as in a charity donation or the giving of alms), and the gift as a tool of negotiating social relations. For Titmuss, who was inspired by Mauss's concept of gift (Mauss 1954), the act of giving blood is voluntary, altruistic, and unilateral, without any obligation to reciprocate. This is how most lay people and health care professionals continue to understand the term 'gift' in relationship to organ donation (Sharp/Randhawa 2014). However, the Maussian gift is nothing like this. Rather, it involves the triple obligations: to give, to accept, and to reciprocate. Despite his misunderstanding of the Maussian gift, Titmuss argues that altruistic blood donation transcends the given material thing itself, becoming what Mauss has called a 'total social fact' (*fait social total*) – an activity with symbolic, economic, axiological, political, legal and religious implications, when subjective as well as objective aspects of a thing are interwoven together. Titmuss uses his understanding of Maussian gift relations as a paradigm for the creation of non-commercial "islands" (for health care systems and education) inside the modern free-market economy society. I believe that Mauss would be excited by kidney exchange policies, which would be exactly what he had in mind when he was referring to the total social act. But as we saw, Maussian gift relations are based on reciprocity and obligations. Jurgen de Wispelaere calls them "quasi-altruistic social transfers", which are very valuable in society, but they "do not fit the analytical category of an altruistic act precisely because their motivation is not a fundamental concern for the other but rather a Humean enlightened self-interest" (2004: 11–12).[9] And de Wispelaere immediately adds that "[o]nce we accept the distinction between altruism and quasi-altruism, many apparent cases of altruistic behaviour turn out not to properly fit the definition" (ibid: 12). That is, to be 'pure,' 'genuine,' 'strong' altruism, in con-

9 According to Hume, enlightened self-interest is when someone serves their own interests by considering and serving the interests of others. Thus, motivated by self-interest, we keep our promises to others in order to ensure that others also keep their promises to us in the future (cf. Cohon 2018).

trast to quasi-altruism, an act must be motivated only by a desire to benefit someone other than oneself (Kraut 2018).

For moral philosophers who treat altruism as a moral principle, altruistic acts should be impartial.[10] Thus, transplant organs should be given to anybody who needs one, as is the case in unrelated, non-directed organ donations (donors as altruistic strangers). Giving a transplant organ to a loved one is not impartial. But helping emotionally related people is very natural human behavior; it can hardly be classified as immoral, although it is not altruistic according to the impartialistic definition. Crouch and Elliott blame the notion that the human agent is independent, disengaged from others, for producing "an inadequate picture of the human agent *within the family*" (italics in original), because "being devoted to the family and its members is a source of deep meaning and value in our lives and the lives of those around us" (1999: 283). As they conclude, the interests of a family member are bound with the interests of the family and its members. But Ross et al. argue that intrafamilial donations, although they are still worthy of moral praise, are not altruistic, because "they serve the interests of recipient as well as the interests of the family" (2002: 419). By contrast, Daar (2002) replies that intrafamiliar organ donations are altruistic because altruism does not negate every element of self-interest. He believes that Ross et al. do not take into consideration that even altruistic strangers, "the purest of altruist", may "have their own equally binding sense of intimacy, obligation, and duty" (2002: 425) to unrelated recipients.

The debate between Ross et al. and Daar started with the aim of determining whether unrelated and related living donor should be on the same ethical level, but it soon became an inquiry into the nature of altruistic organ donation itself. It is a good illustration of how difficult it is to differentiate between 'pure' and 'not-so-pure' altruistic behavior.

3.3 The Paradox of the Altruistic Donation Model

It is generally agreed within the transplantation community that the current organ procurement policy, which has operated for more than a half a century, was "founded on the pillars of altruism" (Dalal 2015: 45), whereby organ donations from both deceased and living donors must be purely altruistic.

Unrelated non-directed living donors who donate organs (mostly kidney) anonymously to a stranger on the waiting list are consistent with such a definition of altruism, and this is the reason why they are often called 'Good Samaritan donors', 'altruistic strangers', or 'altruistic donors'. As Daar (2002) points out, if altruism is the most acceptable basis for organ donation, then altruistic strangers should be the most acceptable donors. But they are not. In fact, for a long time they were not accepted as donors at all, and this attitude has only recently changed, and only in some countries. Are they saints (biblical 'Good Samaritans'), or are they crazy? Conversely, does it mean that so-called related and directed living donors – donors who are emotionally related to the recipient – are not altruistic, or not altruistic enough? A careful reading of the

10 "It is characteristic of modern moral thought to see impartiality as a requirement of, if not a fundamental component of, morality." (Jollimore 2020)

following text from *The Transplantation Ethics* reveals difficulties with basing various forms of organ donation on altruism:

Finally, some transplant programs *even* began to consider *purely altruistic* live donors of kidneys to strangers when donors had no expectation of *any reward beyond the satisfaction* of helping another human being in need. Because we do not want to imply that those who donate to family members and friends are not also *in some sense 'altruistic'* [...]" (Veach/Ross 2015: 187–188, my italics).

The word 'even' here refers to the beginning of the practice of accepting altruistic strangers, who had previously not been allowed to donate organs. Without a doubt, donors to strangers may be classified as "purely altruistic"; there is no even theoretical possibility that they, anonymous donors, not knowing recipients of their kidney, could be rewarded by them. However, although there is no reward from recipients, donors may receive a psychological reward in form of "satisfaction" – simply feeling good for saving somebody else life, or a boost to his/her own self-esteem. Finally, saying that the donation of a kidney to a loved one is also "in some sense 'altruistic'" indicates that there is a perception of different levels of altruism, that the giving kidney to a stranger is more altruistic than giving it to an intimate.

But isn't it a paradox that theoretically ideal altruistic organ donation has been seen for a long time as pathological behavior, and altruistic strangers have been refused by the medical practitioners because their mental health was questioned (today, even though altruistic donors are accepted in principle, a part of their selection involves psychosocial tests). Some critics of the stranger donors refer to "the dark side of altruism" (Flescher/Worthen 2007: 31). For example, the famous case of Zell Krawinsky, a millionaire who against the wishes of his wife donated a kidney to a stranger, has been much discussed in a literature (ibid: 31–42).

Munson (2007) offers an interesting interpretation of this discussion, arguing that the debate between Ross et al. 2002 and Daar rests on a misunderstanding of the role of altruism in organ donation. According to Munson, altruism "is not a moral basis for allowing living donors"; it is "a value, but it is neither a duty nor an ethical principle, and it is a mistake to look to it to justify donation policies" (ibid: 224). Altruism may serve as an explanation of donor's motives, but it is not the moral norm for allowing donation because "a misanthrope who wants to become a donor is as acceptable as a philanthropic superstar" (ibid: 224). It is important to note that there are several ethical principles and societal values on which organ donation is based: not only altruism, but also respect for the human dignity, autonomy, equity, and justice (see also chapter 11 in this book). It is the special status that the human body holds which has, historically and today, informed many of the general public's moral intuitions against commodification of human organs.

Munson thus supports the distinction between altruism defined by motivations and altruism defined by outcome – what I have called, respectively, the narrow concept of altruism, used by ethicists and philosophers, and the broad definition, used by behavioral scientists and biologists (Sykora 2009). Others simply differentiate between motivational altruism and action/practice altruism (Moorlock et al. 2014: 134).

The crucial problem with motivational altruism is epistemological: we are not able to see the true motivations behind a particular, apparently altruistic, behavior. We can only infer indirectly from the outcome of the behavior and its context whether there is even a small theoretical possibility that that behavior could somehow be reciprocated.

Therefore, anonymous unrelated non-directed donors are called altruistic because it is impossible to imagine how this could be reciprocated or what benefit donors could have. By contrast, there are many ways in which an emotionally related donor would benefit from donating a kidney to a loved one (for example, not suffering the loss of the loved one, or being able to share a full partnership life, which is not possible when one partner is undergoing hemodialysis). Moorlock et al. (2014) criticize using motivational altruism as a criterion of altruistic donation precisely because of these epistemic difficulties (among other things); it is nearly impossible for transplantation staff to establish true altruistic motivations of donors.

3.4 The Janus-Face like Character of Altruistic Motivation: Internal/Psychological Reciprocity

In their book *The Altruistic Species*, Flescher and Worthen (2007) relate a story to illustrate the essence of psychological egoism, the enlightened self-interest philosophical theory in ethics.

The story goes like this: Abraham Lincoln, yes, that Abraham Lincoln, once argued with a fellow passenger on his way in coach across the country that all men were prompted by selfishness to do good. His fellow passenger strongly disagreed with him. By chance, they passed over a small bridge that spanned a slough. As they crossed, they heard a terrible noise made by an old sow because her piglets had got into the slough and were in danger of drowning. Lincoln immediately called out to the driver to stop for a moment. He jumped out, rescued the piglets from the mud, and placed them on the bank. When he returned, his fellow passenger said: "What have you done is absolutely against what you have just said. How did your selfishness prompt your behaviour to save these little pigs?" Lincoln's answer was that what he has done was the very essence of selfishness: "I should have had no peace of mind all day had I gone on and left that suffering old sow worrying over those pigs. I did it to get peace of mind." (ibid.: 87–88).

It has long been known that the motivations of blood, tissue, and organ donors are mixed and complex. For example, several distinct types of motives were identified among unrelated bone marrow donors, among them empathy-related motives, positive feeling (improving self-esteem), idealized helping, social obligation, and the most common (45 per cent) were exchange-related motives (donor's hope that they or their family were in a similar situation as recipients, others would do the same for them) (Switzer et al. 1997).

Based on previous works which revealed that both intended and actual blood donations increase positive mood in donors, Ferguson et al. (2008) tested the hypothesis that blood donation is more an act of benevolence than altruism. Three studies, carried out on about 1.500 subjects in total, supported their hypothesis. According to the benevolence hypothesis, both donors and recipients gain: the donor receives a personal reward (feeling good about themselves), and recipients receive a donation (ibid.: 328).

There is some experimental evidence that altruistic acts such as charitable donations involve some kind of reciprocity in form of a psychological, emotional reward. For example, in one study 19 participants could choose to either endorse or oppose societal causes by anonymously deciding to donate or refrain from donating to real charitable organizations. As they chose, their brain activity was measured by func-

tional magnetic resonance imaging (fMRI). The authors of this study found that "the mesolimbic reward system is engaged by donations in the same way as when monetary rewards are obtained" (Moll 2006: 15623). But maybe the difference between rare unrelated non-directed donors representing genuine altruistic donors (heroic donors) and more common "less altruistic" donors to love ones is a consequence of another psycho-sociological parameter: the individual perception of social distance. Psychological experiments with altruistic kidney donors classified as extreme altruists revealed that they do not perceive social distance between self and others (Vekaria et al. 2017). In other words, they perceive others as themselves ('Love thy stranger as thyself'). If this is true, then "such blurred self-other distinctions would require a conceptual revisiting of altruism, because an overlap of one's self- and other-concepts would leave no space for other-regarding preferences" (Kalenscher 2017: 2).

It could be that such hyper altruism is one extreme of the normal distribution of humans' proclivity to cooperate, with extreme egoism, misanthropism, at the other extreme. The vast majority would be represented by area around the average corresponding to 'cooperator' or 'reciprocator'.

In another study, Marsh et al. (2014) used structural and magnetic resonance imaging (fMRI) in conjunction with behavioral tasks to explore 19 extraordinary altruists who had volunteered to donate a kidney to a stranger. They found that extraordinary altruists have larger right amygdala as well as enhanced responsiveness to fearful facial expressions. It is known that reduced amygdala and reduced responsiveness to fearful facial expressions have been observed in psychopathic individuals. They concluded that such variation in neural anatomy and functioning can be seen as a continuum, with extraordinary altruists at the one extreme and unusually callous egoists, antisocial psychopaths, at the other. The authors speculate that "[e]xtraordinary altruism in humans may be associated with variations in established neuro-cognitive phenomena that support social responsiveness and caring for others' welfare" (Marsh et al. 2014: 15039). Commenting on these findings, Greene stresses that "the observed differences between altruists and controls are matters of degree and not stark categorical differences (Greene 2014: 14967).

Such a hypothesis on altruism would perfectly accord with the model of reciprocity, which I suggested for cell, tissue, and organ donations (Sykora 2009, 2011). Here, the simple categorical dualism between altruism and market exchange based on self-interests is replaced by a continuum.

There is no doubt that cultural, ethical, and social norms stimulate cooperative human behavior. However, evolutionary psychologists and experimental economists have suggested that there are also inner biological propensities for reciprocal behavior which are responsible for our species-specific ability to be involved in very complex acts of cooperation, including indirect reciprocal interactions (Nowak/Sigmund 2005; Bowles/Gintis 2011). If there are such propensities for reciprocal behavior, as empirical research (see for example Farrel 2015) might suggest, then a nudging approach could be used to exploit these propensities in the design of more effective organ procurement policies. It is surprising that until recently almost no attention has been paid to reciprocity in public policy designing (Oliver 2017, 2019). Although, the fathers of the nudge theory, Thaler and Sunstein (2008), have already speculated about encouraging higher rate of cadaveric organ donation by changing opt-in policy to mandated choice based on our cognitive biases. However, they ignore the bioethical complexity of the

issue (see chapter 3 in this book). It is yet to be empirically verified whether nudging in organ donation could use human propensities for reciprocal behavior. A much stronger criticism of the use of neurobiological proclivities to reciprocal behavior to design more efficient organ donation policies is that they are reductionist and deterministic (Campbell 2009: 21–23). But this is a strawman argument since human proclivities towards a particular behavior can hardly be equated with biological determinism.

A review of 23 studies on public attitudes to various organ procurement policies (Hoeyer at al. 2013) has found that there is broad public support for some kind of reciprocity to be a part of organ donation policies, but not so much for financial incentives or payments for organ donation. The metastudy revealed that there is a general preference for new non-financial reciprocity policies, such as removing disincentives, over policies based on financial incentives such as cash payments. Interestingly, an important factor was whether remuneration was perceived as expression of fairness (thus a form of reciprocity) or as an incentive.

3.5 Reciprocity, Exchange, and Market

The common understanding of reciprocity (reciprocate, reciprocal) implies "a relation (as in each other)", "a mutual or equivalent exchange or a paying back of what one has received ('reciprocated their hospitality by inviting them for a visit')", "mutual, joint, shared" (Concise Oxford Dictionary 1999: 1002).[11] The language, semantics, is of a great importance here, because it frames the discourse in a particular way. For example, there is a big difference between referring to kidney swapping between pairs as 'kidney exchange' (typical in the USA) or 'kidney sharing' (in Europe).

Although an organ market is generally considered to be immoral, several authors argue that a system which would provide financial rewards to donors is morally justified, especially in case of living donors, who put themselves at a non-trivial health risk (e.g. Radcliffe-Richards et al. 1998; Dijk/Hilhorst 2007). Many authors propose a softer alternative of a regulated market. In the so-called ethically regulated organ market, organs would be bought from donors for a fair price by a non-profit organization; however, the organs would not be sold to recipients but instead allocated according to medical criteria. Money for buying organs would come from health insurance companies and charities (Erin/Harris 2002).

But the principal objection to any kind of market, regulated or unregulated, is that it transforms human organs into commodities – and it is not acceptable to commodify the human body because of its inherent dignity (see also chapter 11 in this book).

One of the biggest problems with the use of reciprocity as a basis for organ donation policy is that it is usually equated with exchange, in particular market exchange. And if market exchange is not allowed for organ procurement, then organ procurement based on reciprocity should not be allowed. But this argument is not valid because reciprocity should not be equated with market exchange. For sociologists and anthropologists, exchange, along with reciprocity, have much broader meanings. Indeed, they are considered to be the basis on which the entire social and ethical life of civilization rests. Social exchange theory describes human social behavior from the perspective

11 Cp. https://www.merriam-webster.com/dictionary/reciprocate (accessed June 29, 2020).

of social exchange and reciprocity; the exchange of goods at the market is just a very small part of it (Cook/Rice 2006).

Indirect reciprocity plays a crucial role in human societal solidarity, and it is behind many modern welfare state policies, such as the tax, pension, and health care systems. Komter has explored the relationship between the gift giving and solidarity, asking whether they are any similarities "[B]etween donating blood and being a union member?" (2006: 203). In her study she noticed that when respondents expressed motives for gift giving that they believed were purely altruistic – friendship, love, gratitude, respect, loyalty, or solidarity – they may have had a strategic aim. According to Komter's analysis, reciprocity is a key and most effective factor in "creating the cement of society" because reciprocity is "the elegant combination of self-interested concerns with the requirements of social life" (ibid).

And finally, modern economists also see reciprocity in a much wider context than just a synonym for the exchange of goods. For example, according to renowned economist Serge-Christophe Kolm (2006), it has become common after WWII to distinguish three types of economic systems: exchange (referring to market exchange), redistribution, and reciprocity. In his comprehensive study on reciprocity from the economic point of view, he refers to reciprocity as "one of the main basic social relations that constitute societies" (ibid.: 375). Thus reciprocity "consists of being favorable to others because others are favorable to you" (ibid.).

4. Altruism, Kidney Exchange, and Reciprocity in Transplantation Medicine

4.1 Is Kidney Exchange Morally Wrong because it is not Altruistic?

Having shown how confusing the use of concept of altruism in transplantation ethics could be, I now turn to the analysis of the kidney exchange concept from the perspective of altruism. Altruism is by definition an ethical barrier to commodification of human organs; altruistic organ donation is usually understood as the antithesis to buying and selling human organs. Obviously, commercial relations between seller and buyer are not based on altruism but on self-interest. Critics of KE argue that this system is not based on altruism: although kidneys are not exchanged for money, they are still exchanged, in what amounts to a form of kidney barter. This is a form of non-monetary market, and therefore KE is a commodification of kidneys.

In the USA, the question of whether KE procedures can be introduced at transplantation centers is not just ethical, it is also legal. Would KE be compatible with the federal organ donation legislation (The National Organ Transplant Act, NOTA), which bans organ markets? Therefore, opponents of the KE scheme, such as Menikoff, see it as "a quasi-contractual arrangement", and although "no money changes hands," it is "a step toward for-profit transactions, and it threatens to undermine the organ donor system" (1999: 28), which is based on altruistic donation. However, after several years of debate, legislators finally declared that KE procedures were compatible with the NOTA (an amendment to the NOTA declaring it was fully compatible with KE had to be added). With this change, proponents of organ markets now argue that because kidney exchange procedures are legal, kidney markets should be too. Such an argu-

ment, of course, is also used by critics of KE, who argue that the system's market-like character means that it should *not* be legalized.

The word exchange in the term "kidney paired exchange" is the main reason that KE could be so easily classified as barter. Because economists classify barter as a form of trade, critics of KE argue that although it involves no selling and buying, it is in fact a form of kidney market: "From an economic point of view, a kidney exchange is one of the purest forms of trade." (Sönmez/Ünver 2017: 681).

Even if we do not agree that kidney barter is a form of trade, we still encounter an ethical problem because of the reciprocal relations underpinning KE. For defenders of genuine altruism in organ donation, KE represents the gradual slide down the slippery slope towards an organ market and the commodification of the human body. In their view, the pragmatic and utilitarian justifications cannot counterbalance the abandoning of the ethical principle of altruism.

4.2 Towards Indirect Reciprocity Model

Minerva et al. (2019) argue against the accusation that the GKE program is unethical because it is a form of organ trafficking and involves exploitation of the poor, coercion, and the commodification of transplant organs. They defend GKE as non-commercial, arguing that any money involved is used solely to cover the cost of the transplantation, not to buy organs. They also refer to the altruistic motivation of all donors participating in GKE to help a loved one; *a fortiori* GKE cannot be considered to be a form of organ sale: "[T]he motivation of all donors involved in the GKE, whether in high income or low income countries, is not financial gain, but altruistic: to help a loved one to survive kidney failure." (ibid.: 1776).

In kidney exchange, a donor does not directly donate to a loved one but to an unrelated recipient in another donor/recipient pair. However, because they donate on the condition that their loved one receive a kidney in return, their primary motivation is not to help an unrelated person but rather their loved one. In KE the formula could be: 'You give your kidney to my loved one and I'll give my kidney to your loved one', a variation of "You scratch my back and I'll scratch yours" – a classic expression of reciprocal altruism.

There is empirical support for the claim that reciprocity, not altruistic giving, is fundamental to KE programs. According surveys, most KE donors would not be likely to donate to their respective recipients without a kidney being designated to their partners. As Toews et al. point out: "Donation through kidney paired donors is done in exchange for – and with expectation of – a reciprocal kidney donation and transplantation." (2017: 1996) In fact, one of the reasons why two- or three-way KE are performed simultaneously is so that donors do not have the chance to withdraw after their loved one receives their transplant.

The Nuffield Report on the Human Body (2011), prepared by the highly respected the UK Nuffield Council on Bioethics, is clear about the reciprocal character of KE: kidney exchange is underpinned by the "value of reciprocity", the donor/recipient pairs enter "a reciprocal arrangement" (ibid: 121). The Report documents a significant shift in organ and tissue donation discourse from pure altruism to the acceptance of some forms of reciprocity – since there is a close connection between reciprocity and solidarity, and solidarity and altruism are seen as overlapping concepts.

5. Conclusion

The current system of organ procurement based on altruistic organ donation is considered by many to be "a qualified failure" (Satel et al. 2014: 217), and the most common suggested solution is to replace it with some form of organ market scheme. I have argued that we need to stop thinking in this dichotomy, and I have proposed a new approach to the organ shortage problem based on indirect reciprocity. Such a model would not be altruistic (although it would incorporate altruistic organ donation), but neither would it be based on commercialization of organ procurement.

I argue here that the fundamental human propensities for reciprocal behavior (explored by experimental economists and behavioral psychologists) could become an important part of the complex motivations behind organ donation, and could dramatically increase the number of donors. If the organ procurement policy is set up so that it would be in a person's self-interest to commit to organ donation, this should translate into higher organ procurement and therefore more transplantations. The blurred line between reciprocity and market exchange is probably the main reason why various new policy proposals to stimulate motivation through some kind of reciprocity are viewed with great distrust and fear of organ commercialization.

The borderline between altruism and reciprocity is also blurred. I have explored here the ambiguity of altruistic motivations, and the relationship between altruism and reciprocity in both unrelated non-directed living donors (heroic altruistic donors) as well as emotionally related directed living donors. Complex motivations of emotionally related directed donors, who are willing to give organs to a loved one but not to a stranger, involve an important aspect of reciprocity, in which genuine concern for the well-being of the loved person merges with self-interest.

Next, I analyzed indirect reciprocal relations between donors and recipients from immunologically incompatible donor/recipient pairs participating in KE transplantation programs. KE is a very successful innovation in living organ donation with great potential to increase the organ procurement rate. In my interpretation, the very essence of kidney exchange policy is indirect reciprocal relations between donors and recipients (with important exception of bridge donors).

The concept of altruism has been used recently to defend GKE programs from the accusation that they are a kind of organ market, organ trafficking (Minerva et al. 2019). The authors argue that GKE cannot be organ trafficking because all donors involved in GKE have altruistic motivations (to help a loved one). I agree that GKE is not an organ market, but not because kidney donation in KE is altruistic; rather, there is no organ selling and buying in GKE or other forms of KE. I argued KE programs are an example of a reciprocal donation model, not an altruistic one. This raises a question: Can KE be ethically justified if it is not based on altruistic organ donation? I argued that it can, but indirect reciprocity has to be at first accepted as a moral practice.

Because the concept of altruism is often used vaguely, and ideologically, I started by revisiting and rethinking the roots of the concept's ambiguities. I call this exploration a prolegomena for any future proposals of organ procurement policies based on reciprocity.

After some preliminary clarification of the relationship between altruism, reciprocity, and exchange, I focused on kidney exchange. I had two reasons: First, kidney exchange transplantations are the most important recent innovation in the policy

of organ procurement and have great potential. Second, the moral status of kidney exchange is controversial. Although they have been accepted in some countries, after several years of discussion, as being compatible with the altruistic model of organ donation, their critics argue that they are a form of organ barter; and since economists consider barter to be a form of non-monetary market, kidney exchanges are not compatible with altruistic model and should not be allowed.

By contrast, I argued that organ donation based on indirect reciprocity can be ethically justified, outlining the kind of analysis that is required for such a justification. I have focused on living organ donations, but I believe that philosophy of organ donation based on indirect reciprocity is also applicable to deceased organ donations. Once indirect reciprocity is accepted to be as moral as altruism, then various new organ procurement policies based on indirect reciprocity, both from living or deceased donors, will be accepted and implemented.

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