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If the Price is Right: The Ethics and Efficiency of Market Solutions to the Organ Shortage

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Abstract

Due to the shortage of organs, it has been proposed that the ban on organ sales is lifted and a market-based procurement system introduced. This paper assesses four prominent proposals for how such a market could be arranged: unregulated current market, regulated current market, payment-for-consent futures market, and the family-reward futures market. These are assessed in terms of how applicable prominent concerns with organ sales are for each model. The concerns evaluated are that organ markets will crowd out altruistic donation, that consent to sell organs is invalid, that sellers will be harmed, and that commodification of organs will affect human relationships in a negative way. The paper concludes that the family-reward futures market fares best in this comparison, but also that it provides the weakest incentive to potential buyers. There is an inverse relationship between how applicable prominent critiques are to organ market models and the increase in available organs they can be expected to provide.

Introduction

Organ transplantation holds the promise of improving and prolonging life for a growing number of people. There is, however, a chronic shortage of available organs, and people are dying on the organ-transplant waiting list (Cook and Krawiec 2014; Council of Europe and Organización Nacional de and Trasplantes 2016). This has sparked a lively debate as to how this problem should be addressed. One family of proposals suggests that we provide valuable considerations for those who contribute an organ and thus proposes financial incentives to end the organ shortage. This implies that we reward sellers for their organs, rather than compensate them for inability to work or other inconveniences associated with a donation. This article contributes to the rich literature on organ markets in the following way.

First, it identifies and describes four kinds of organ markets, each of which is prominent in the existing literature. The four models are the unregulated current market, the regulated current market, the payment-for-consent futures market, and the family-reward futures market. Second, the article explores how prominent ethical concerns, i.e., crowding out, invalid consent, harm, exploitation, and commodification of human relationships, apply to the four models. This approach sets aside objections that these arguments are weak or not legitimate. The systematic analysis of how the four models fare should be considered a supplement to existing discussions of which regulatory measures connect to specific concerns (I. G. Cohen 2014a) and to general discussions about the permissibility of organ markets (Stephen Wilkinson 2003; Cherry 2005; Flescher 2018; Mahoney 2009; Richards 1996;

Radcliffe-Richards et al. 1998; Richards 2012; Semrau 2017; J. S. Taylor 2005; R. S. Taylor 2007).

Four Different Models

Much has changed since one observer declared in 1978 that nobody was seriously defending the market solution to the organ shortage (Muyskens 1978, 92). In fact, there is a wealth of arguments to the effect that a market solution is morally permissible and/or required (Barnett, Blair, and Kaserman 1992; Becker and Elías 2007; Cook and Krawiec 2018; Richards 1996; Radcliffe-Richards et al. 1998; Richards 2012; J. S. Taylor 2005; 2014; 2015). In this literature we can identify four core models of organ markets which have been the most prominent in discussions over the last four decades and remain so in contemporary discussions and over the last four decades.

In an *unregulated current market*, kidneys (and other non-vital organs) can be bought from living sources. “Current” here refers to the fact that the organs are removed shortly after the agreement has been made. “Unregulated” means that there is little or no government intervention (E. Block 2011). The unregulated current market often employs a market mechanism for allocating organs among possible recipients (Becker and Elías 2007). A *regulated current market* also allows for sale of organs from living sources (Beard, Kaserman, and Osterkamp 2013; Erin and Harris 1994; Friedlaender 2002; Erin and Harris 2003; J. S. Taylor 2005; Hippen and Matas 2009; J. S. Taylor 2014). However, the state profoundly influences how the market functions and how the organs are allocated. The literature suggests a number of ways in which the state could intervene: by introducing a minimum or a fixed price for sellers (I. G. Cohen 2014a, 80; Lysaght and Mason 2000; Erin and Harris 1994, 141), by limiting exit and entry to the market through licensing requirements, or by choosing a state-driven monopoly as the sole purchaser of organs (Erin and Harris 1994; Kaserman 2001; Ockenfels and Weimann 2001). Regulation can also relate to potential organ sellers, including strict testing mechanisms to clarify their psychological robustness and voluntariness or a minimum age for sellers (Hartman 1979; Matas, Hippen, and Satel 2008, 383; Pajouhi et al. 2014; J. S. Taylor 2014).

The third market is a *payment-for-consent futures market*. Futures is short for futures contracts. This is an economic arrangement where one agrees to buy or sell a commodity for a fixed price at a specified time in the future (Investopedia 2003). In the context of organ procurement, futures markets allow people to sign a futures contract exchanging the right to remove their organs after death for the purpose of transplantation for a specified valuable

consideration. In a payment-for-consent futures market, people receive a valuable consideration when they register as sellers (Hansmann 1989; Schwindt and Vining 1986). Such an arrangement differs from current market models because the sale pertains to organ removal after the seller's death. Organ removal takes place in the future rather than when the agreement about the futures contract is reached. Typically, such proposals come with levels of state intervention similar to the current market and a state-based distribution of the acquired organs. Form of payment can be both monetary and non-monetary. However, proposals often embrace non-monetary measures such as health insurance discounts to the sellers and/or their families (Arnold et al. 2002; Hansmann 1989), donations to charity, money for a funeral, or college education benefits (Nuffield Council on Bioethics 2011; S. E. Robinson 1999).

The last model presented here is the family-reward futures market. In such markets, an agreement is reached about the rights to remove organs after the seller is deceased, but the payment accrues to the family of the person who signs the contract (L. Cohen 1991; Crespi 1994; Harris and Alcorn 2001; Waldby and Mitchell 2006). While the term "futures market" is not always employed, the defining feature of this market solution is that the seller is not rewarded directly upon agreeing to the contract. Instead, the family receives some form of reward when the organs are removed for transplantation (Arnold et al. 2002; Goodwin 2006; Harris and Alcorn 2001; Novelli et al. 2007; S. E. Robinson 1999). Typically, these systems involve a large degree of government intervention and state-based distribution of organs.

The above presentation of prominent models mainly focusses on their essential features. Where needed, the presentation mentions features which are commonly stressed among those who favour these models. While these features are not defining in the sense that we cannot imagine the models without them, they are important for understanding and assessing the models. So while we can imagine a family-reward futures market that allocates organs by a market mechanism, or an futures market with living sources, these will not be discussed here because it is not prominent in the literature.

Concerns and Criticism

Two branches of criticisms can be identified in the organ markets literature. The first relates to efficiency and, simply put, argues that introducing the market will not deliver organs at the rate or quality suggested by the proponents of such a solution. The other raises concerns that are relevant *even if* the market works as efficiently as depicted by proponents. The next sections briefly present these criticisms and discuss the extent to which they are applicable to the four market models.

Efficiency Based Criticisms

Fewer organs

At the heart of the above proposals is the notion that their introduction will increase the number of organs available for transplants significantly. Some suggest the opposite scenario, however, where financial incentives or market arrangements reduce the number of available organs (DeJong et al. 1995, 464; Guttman 1991; Anonymous 1974, 1223; Williams 1994, 350). This section presents the empirical and theoretical foundations for such concerns and evaluates the extent to which the concerns apply to the four models under consideration.

One line of reasoning draws on Richard Titmuss' famous study of blood donation (Titmuss 1997). Titmuss noted how the altruistic system in the United Kingdom outperformed the incentive-based system operating in the United States and offered an explanation. He believed that a significant proportion of those who donate under the altruistic system would decline to do so under one that offers monetary incentives. Introducing payment conveys a thought that we should view donation in light of what we – rather than others – stand to gain. The idea is that many would feel that donating organs is not worth it in that perspective, or simply be so upset about the new system that they would decline to participate. The literature refers to this phenomenon as the market crowding out morals and cites studies from different spheres of society where the introduction of financial incentives crowds out norms or motivations that were able to deliver better outcomes (S. M. Rothman and Rothman 2006; Sandel 2012, 113–25; Satz 2010, 193).¹ Others offer alternative explanations for how markets may reduce the number of available organs; one study found that medical personnel would be less comfortable about asking for organ donations when financial incentives are involved (Altshuler and Evanisko 1992). Others suggest that paid donation may replace rather than supplement existing donations. Some note how living donation rates between family members plummeted when it became possible to travel to China to buy organs (Danovitch and

¹ See also (Bowles 2016), who is somewhat more hopeful about what incentives can achieve. For a recent critique of the crowding-out thesis, see (Semrau 2019).

Leichtman 2006), and the Iranian system of paid donation has experienced similar difficulties (Zargooshi 2001).²

Assessing which organ market model provides the largest increase in available organs is a difficult task. This article will only indirectly attempt to do so by comparing the degree to which the models have the traits which the literature suggests may spark a negative reaction. If people react negatively to payment for organs, crowding out is presumably more likely in procurement models where the transaction resembles a regular market transaction. Based on this thought, the worry about crowding out morals is clearly more relevant for the regulated current market and the unregulated current markets than for the two futures markets. This assessment is based on the notion that the more the introduced scheme resembles a regular market transaction, the more likely it is to crowd out altruistic norms. Cohen notes that regulation, for instance a price ceiling, may lessen the extent to which even the exchange on a current market feels like a trade. We may therefore think that the concern is more relevant for the regulated than for the unregulated current market (I. G. Cohen 2014a, 85). Even so, the payment-for-consent futures market and family-reward futures market seems much further removed from market transactions, and we may suspect that they are less likely to crowd out altruistic sentiments. Of these two models, the payment-for-consent futures market seems to resemble a regular market transaction the most, but the difference decreases if this version of the futures market is proposed with non-monetary payment, such as a reduction in the premium on health insurance.

Comparing the models in this way might not tell us everything we want to know concerning efficiency. We could also have efficiency concerns that vary among the proposed models. Models that include an instant financial benefit provide a stronger incentive than the family-reward model, which only offers a reward in the future, which is given to the seller's family rather than to the seller. We might therefore expect the latter kind of procurement systems to yield fewer organs. We can thus identify contrasting possible trends regarding what to expect from models introducing market-based organ procurement systems. The markets that offer the largest and clearest incentives are also those that we may suspect are more readily subject to crowding-out concerns.

² The Iranian experience and the lesson to draw from it is contested (for influential articles, see (Zargooshi 2001; Ahad J. Ghods 2004; Larijani, Zahedi, and Taheri 2004; A. J. Ghods and Savaj 2006; Rizvi et al. 2009; Aramesh 2014; Pajouhi et al. 2014).

Bad organs

Titmuss' work with blood donation inspires concerns about the quality of organs procured through market mechanisms. Titmuss argued that when blood is sold rather than voluntarily donated, we provide incentives to bring bad blood, ultimately increasing the risks of those receiving the blood (Titmuss 1997). In relation to organs, the concern stresses how the presence of a (sufficiently strong) financial incentive might encourage people to offer inferior organs to the organ pool. When money is involved, the problem of moral hazard arises (Anonymous 1974, 1225; Williams 1994, 350). While few would prefer giving away a bad organ, some might be tempted to sell one. The problem arises due to information asymmetry: the sellers know much more about their own health than those buying the organs (Danovitch and Leichtman 2006; Anonymous 1974, 1225). There are reports of black markets in which people have committed outright fraud, such as submitting other people's urine as their own in the screening process (Koplin 2014). It is difficult to assess the extent of this problem, and it ultimately comes down to the ability (and willingness) to screen organs and sellers (Chapman 1982, 405; Hippen and Matas 2009, 143).

To what extent is this quality concern relevant for the four procurement systems under discussion? Systems with a high degree of government intervention are most readily available to conduct control and resist fraudulent behaviour from sellers. We might also expect such behaviour (and asymmetric information) to be more frequent in the two models with living sources. Regarding the relevant differences between family-reward futures market and the payment-for-consent futures market, the latter seems to carry at least a modest risk of moral hazard. Or to put it conservatively, nothing in the payment-for-consent futures market models incentivizes people to take care of their organs; as the model works, they have already received the payment.

Both the arguments related to fewer organs and to organ quality are consequentialist. Their implications for our evaluation of the organ market are essentially an empirical matter. Efficiency considerations count in favour of a market model to the extent that it would increase the total supply of available organs (i.e., if the net difference between increases and decreases in organ supply is positive) (Dworkin 1994; Hartman 1979, 169). We now turn to concerns which are not based on the quality or quantity of the organs brought about by the market models.

Non-Efficiency Concerns

The literature raises further ethical concerns regarding organ markets, which are less related to consequences. They do not maintain that the market will fail to deliver organs at the rate or quality suggested by the proponents of market-based models, but rather that in introducing such markets, some other relevant bad occurs. This section presents the most prevalent of these criticisms and examines their relevance for the different models. Several of them are presented and discussed in a wide body of literature. To ensure a sufficient level of detail in the discussion, some core arguments from the literature are presented. The discussion is of a specific nature and addresses the vulnerability of different models to frequently raised criticisms of market-based solutions to the organ shortage. As already stressed, this means that rather than assessing the strength of the concern as such, it is their relevance or applicability under each model which is addressed.

Invalid Consent

The first relevant concern is whether people who agree to sell their organs are able to give valid consent. Do certain factors related to the transaction undermine the validity of the consent (Hughes 2009)? Three factors are suggested to invalidate consent: coercion, social circumstances, and the lure of generous offers. Coercion is a concern stressed by numerous authors (Glasson J et al. 1995; Murray 1987b, 1078; S. E. Robinson 1999). Coercion can broadly be understood as situations in which A is made to act in accordance with B's preferences because B threatens to submit A to a harm relative to some baseline (Wertheimer 1989; Stephen Wilkinson 2003, 97). One relevant form of coercion is when people are pressured into selling their organs by people who want their money (Malmqvist 2015, 116). How vulnerable are the four core models to this concern?³ It is clearly most relevant in situations where money changes hands immediately, i.e., in the unregulated current market, the regulated current market, and the payment-for-consent futures market. Among these three

³ It is often pointed out that altruistic procurement systems accept donations from people in circumstances that would presumably undermine the validity of their consent to a similar extent (i.e., a father choosing to donate his kidney because his daughter is sick or people pressured by their families to donate) (see (Anonymous 1974, 1199; Denise 1985, 1034; Hartman 1979, 165; Kishore 2005, 363; Liberto 2013; Manga 1987, 328; S. E. Robinson 1999). Such claims rely on the empirical assumption that the two kinds of circumstances affecting the validity of consent are equally hard to detect in a screening process. Furthermore, as Malmqvist highlights, it is a reasonable fear that this new kind of pressure may supplement existing pressure to part with an organ (Malmqvist 2014b).

models, the concern about coercion seems most applicable to the unregulated current market due to limited state intervention and limited assessment of sellers. As the family reward involves delayed payment and only if the organs are utilized for a transplant, coercion is more unlikely there.

The second factor which may undermine consent is poor socio-economic circumstances. A study found that those who declared a potential willingness to sell their organs would only do so under very poor economic circumstances (Rid et al. 2009). The general idea is that people in such circumstances are not in a position to give valid consent to sell their organs. Is their consent valid, do they understand the consequences of their choices (I. G. Cohen 2013; 2014b; 2015), and can others determine whether they belong in that category (Malmqvist 2014a)? How vulnerable are the four models to such a concern? Any model which offers cash up front to people may attract those in very poor circumstances. Again, this includes the unregulated current market, the regulated current market and the payment-for-consent futures market. As the latter two are often proposed along with ample regulation to the benefit of the sellers, they would perhaps be more likely to be able to identify potential sellers whose consent should be considered valid. The family-reward futures market would fare even better as the money will only be paid in the future.

The third problem highlights how the lure of generous offers may undermine the validity of consent. The general idea is that our decision-making capacities are distorted by readily available large sums of money (Veatch 2000, 156; Stephen Wilkinson 2003). Also this concern is most applicable in the unregulated current market, the regulated current market and the payment-for-consent futures market. As the models which include regulations have the option of incorporating a screening process to ensure the validity of consent (Harris and Alcorn 2001; Hartman 1979, 169; Harvey 1990, 118; Lysaght and Mason 2000, 255), the regulated models fare least poorly. The payment-for-consent futures market could provide a constant benefit to those who sign an agreement regarding the use of their organs (e.g., health insurance). These models are less problematic in this sense. The family-reward model fares even better, as the money is not available immediately and does not even befall the person who signs up. For this reason, the lure of large sums of money is least applicable to family-reward futures market. Summarizing the above, the features suggested as undermining consent (coercion, desperate circumstances, and the lure of large sums) are most clearly present in the unregulated current market, followed by the regulated current market and the payment-for-consent futures market. The concerns are least applicable in the family-reward futures market.

Harm to sellers

Another prominent concern is that an organ market will harm the sellers (Adair and Wigmore 2011; Danovitch and Leichtman 2006; Koplín 2014). Harm is a complex notion, but for our purposes harm will be understood, following Wilkinson, in a comparative sense. Whether one is harmed depends on how one's standard of living compares to a relevant baseline (Stephen Wilkinson 2003, 60), i.e., range of options, the quality of one's alternatives, etc.⁴

For which of the four models is the prospects of sellers being harmed most applicable? The first important distinction is between the two current markets and the two futures markets. As current markets allow for the sale of organs from living sources, the concern about harm is clearly more relevant there. Empirical assessments of harm to kidney sellers are drawn from existing black markets (I. G. Cohen 2015, 265–76). In one study, eighty three per cent of kidney sellers submit that their living conditions have not improved after the sale; seventy nine per cent regret selling and would not recommend it to others; sixty two percent experience deteriorated health; and one study finds that average family income drops by one-third (I. G. Cohen 2013; Goyal 2002). Other studies show that sellers are unable to return to work (Turner 2009). Since those kinds of harm are not relevant for the two versions of the futures market, the harm concern is clearly most applicable to the current markets, which utilize living sources. A closer look at the regulated and the unregulated current market allows us to assess how well each of them fares. Note first that donating a kidney is not particularly dangerous. There is nothing in the process of having a kidney removed, which automatically means, that those undergoing this procedure is harming the donor in a relevant way. If people are harmed by selling their kidney, it must be because they – as sellers – possess specific characteristics which make them more vulnerable. Assessing the empirical evidence that sellers in the black market fare poorly in terms of health outcomes, social gains and psychological/social consequences, Koplín argues that these would also occur in an unregulated current market (Koplín 2014). Once the ban on organ sales is lifted, sellers would be in a similar situation to sellers in a black market. It would be vulnerable people in dire social circumstances who would be willing to sell, and the harm they experience due to their

⁴ Donation can of course in itself be harmful. A large Norwegian study found that kidney donors have an increased long-term risk of end-stage renal disease and higher mortality compared to a control group of non-donors who would have been eligible for donation (Mjøen et al. 2014).

social circumstances and vulnerable positions would be unchanged (Koplin 2014). Comparing the regulated and the unregulated current markets, the most plausible assessment is that the former will be best equipped to filter out those who are likely to be significantly adversely affected by the procedure. Furthermore, the regulated current market would be able to include post-transplant follow-ups for sellers.

Thus, the concern about harm to sellers is least applicable to the payment-for-consent and the family-reward futures markets. The regulated version of current markets allowing for living sources of organs offers the best prospects for minimizing harm to sellers.

Exploitation

The third criticism regarding exploitation maintains that a transaction can be wrong even when the seller has given valid consent and is not harmed. There are two prominent views on what it means to be exploited: (1) disparity of value, i.e., people are paid too little compared to what others stand to gain from a transaction; or (2) people are treated in a manner that is in disaccord with their ends (Epstein, Richard A. 2014; Wertheimer 1999; Stephen Wilkinson 2003).⁵ The former account will be given most attention here, as the latter will be discussed under the heading of commodification. The disparity of value criticism is distinct from the criticisms examined thus far because it—at least according to some understandings—can apply to transactions where there is neither coercion nor harm (Wertheimer 1999). The literature does not agree on what it means to be exploited, but this definition is preferred here because it clearly distinguishes exploitation from issues already discussed.⁶

According to the disparity-of-value understanding of exploitation, any market can in principle pay people too little for their organs. The concern of exploitation is most applicable to the unregulated current market because it works through supply and demand. The lack of market intervention on behalf of individual sellers is likely to result in lower prices. A market based on unequal background conditions with little state intervention seems to put would-be sellers in the worst position, thus increasing the likelihood of exploitation. As a frequently proposed form of regulation is a minimum price for sellers (Stephen Wilkinson 2003, 131), concerns regarding exploitation are less relevant in regulated markets. Comparing the

⁵ The latter kind of concern is discussed in (Björkman 2006; Chadwick 1989; Kerstein 2009; Tadd 1991).

⁶ Admittedly, other interpretations of exploitation may have a similar feature. See for example versions of exploitation discussed in (Koplin 2017).

regulated current market, the payment-for-consent futures market and the family-reward futures market, one important difference should lead us to conclude that the first is more prone to exploitation. As the disparity of value notion of exploitation concerns how benefits and burdens of a transaction are distributed between the transacting parties, it is worth noting that the current market includes an important burden, namely physical risk to the seller, which is not present in the futures markets. Therefore, this model has (all else being equal) greater potential for being exploitative. Thus, the concern about exploitation is most applicable to the unregulated current market and least applicable to the two versions of the futures market.

The commodification of human relations

The concern about commodification covers a broad range of ideas, only a few of which can be discussed here. Radin distinguishes between broad and narrow senses of commodification (Radin 1996; S. Wilkinson 2000). The narrow sense is mostly a descriptive notion: an object is commodified when it is bought and sold. The broader sense relates to us viewing objects as items to be bought and sold. When authors raise concerns regarding commodification, they often have the broader notion in mind. They are concerned about what this practice means for society and for human relations (Brecher 1994; Manga 1987, 328; Murray 1987). In that spirit, the commodification criticism highlights the possible effects of a market-based procurement system. Most arguments draw explicitly or implicitly on Titmuss but rely on his broader arguments (Koplin 2015) rather than his observations regarding the effect of commodification on the quantity and quality of the acquired good (see the section on efficiency).

According to Satz, a prominent exponent of this view, the buyer-seller relationship becomes inherently unequal when an organ market is introduced (Satz 2010). A recurrent idea is that the possibility of selling your kidney affects human relations in an unequal way. Specifically, refusal to sell a kidney may negatively affect how others judge a person (Andrews 1986, 32; Rippon 2014b; 2014a; D. J. Rothman et al. 1997; S. M. Rothman and Rothman 2006; Zutlevics 2001, 299). As selling your kidney while you are still alive or in a payment-for-consent futures market becomes a legitimate source of immediate income, it also shapes others' expectations. If liquidating your assets were a requirement for unemployment benefits, would that include your kidney? If the courts determine that you owe a person a lump sum after you declare bankruptcy, are you allowed to not sell your kidney to be able to pay? (Anonymous 1974, 1218). Would the bank be allowed to consider your kidney as collateral for a loan (Satz 2010)? According to Rippon, these changed relationships are a form

of harm (Rippon 2014b), but we can just as easily understand them as concerns regarding the effects of commodification broadly understood. These concerns specifically pertain to how viewing organs as commodities affects human relationships and society at large.

How does a concern about commodification of human relations apply to the different procurement models discussed here? Satz submits that this concern is by far the strongest in the market for organs from living sources (Satz 2010, 205). She believes that a payment-for-consent futures market will not lead to the described deterioration of human relationships. I am unsure that we can be quite so confident. All else being equal, one could imagine even stronger pressure from others to sign up in a payment-for-consent futures market. What excuse could one have for not accepting the money on offer for signing up? Perhaps the verdict changes if the amount on offer is much larger in the current markets. But it is not quite clear that the described pressure would not arise in the context of a payment-for-consent futures market. It should be acknowledged, in line with Satz' assessment, that the effect on human relationships would be smallest in the family-reward futures market. Since this model provides no immediate benefit, it would be a different kind of expectation, that is, an expectation to leave as much as possible to your relatives. Others, be they public institutions or banks, cannot expect to benefit in this context. Thus, the principled concerns regarding commodification seem to be the most relevant criticism across the board of models for introducing market mechanisms and incentives. Like the others, it seems most prominently present in the unregulated market.

Comparing the Models

What does the above discussion teach us about the prominent market-based organ procurement models: the unregulated current market, the regulated current market, the payment-for-consent futures market, and the family-reward futures market? The purpose of the discussion was to detect how readily prominent concerns apply to them. The examined concerns were harm to sellers, invalid consent, exploitation, commodification of human relationships, and concerns regarding efficiency, most notably the crowding out of morals. Assessing the models in this manner reveals a very interesting pattern. Concerns regarding harm to sellers, invalid consent and exploitation were least applicable (if at all) to the family-reward futures market. The same is true for commercialization of human relationships, though we cannot reject that there will be some (though less) family pressure to register as organ seller. The discussion also made it clear that some very distinct features in this model make the concerns less applicable. Especially whether the model allows for organs from living

sources, whether the model requires the market to be regulated, and whether there is an immediate payment turned out to be important in the discussion of consent, harm, and exploitation. That the payment accrues to someone else than the organ seller and at a later point in time were also features which made the concern about commodification of human relations less applicable to the family-reward futures market. On the other hand, the concern applies most to the unregulated current market due to its different configuration on these features.

Discussions about the efficiency of organ markets often focus on whether we can expect a crowding-out effect. In terms of crowding out, it was argued that the more the payment for organs resembles a regular market transaction, the more likely it is that crowding out will occur. This again gives the advantage to the family-reward futures market. In terms of organ quality, the presence of regulation and whether payment is immediate are important for what we can expect. Regarding these two features, the configuration of the family-reward futures market is optimal in terms of filtering out bad organs. The idea is that one might be less tempted to sell a bad organ to benefit one's family in the future than for immediate gain and that screening of organ quality may be easier for deceased organs. The upshot is that the family-reward futures model fares best across a number of prominent concerns. However, even if this model is deemed least likely to result in crowding out, avoiding that backlash is not the same as being able to increase the amount of organs procured substantially. This is related to a different aspect of efficiency, which pertains to whether a market-based model provides strong incentives to become an organ seller. As noted in the discussion, the strength of the incentive is, simply put, a product of two things: the price on offer and clarity of the incentive. A clear incentive leaves no doubt about what we need to do to obtain a benefit and gives us a reason to act now rather than later. This constitutes a challenge for the family-reward futures market. This futures contract offers no reason to sign up now rather than later because it provides no direct benefit.

Taking all of the above into account leads to a puzzling final observation. While the family-reward futures market is the model for which the examined concerns are least applicable, it also provides the least clear incentive to would-be sellers. It may very well be that the family-reward futures market is best equipped to avoid the concerns expressed opponents of market solutions to the organ shortage. However, it is also least likely to bring about a large increase in available organs. There is an inverse relationship between how ethically controversial the market models are and the increase in organs they can be expected to provide. As already stated the analysis conducted here, based on the applicability of the

critiques, are of course open to the possibility that the critiques are wrong or unimportant. Their merit in those terms, have not been assessed in the above.

Conclusion

The family-reward futures market is least compatible with the prominent concerns discussed. This can be attributed mainly to the absence of organs from living sources, regulation and the lack of immediate payment upon agreeing to a future contract. While these features are important in determining that prominent concerns are not relevant to the family-reward futures market, they also weaken the incentive to donate significantly. Thus, there is an inverse relationship between how ethically controversial the market models are and the increase in organs they can be expected to produce.

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