



Can we increase organ donation by reducing the disincentives? An experimental analysis[☆]



Zackary Hawley^a, Danyang Li^{b,*}, Kurt Schnier^c, Nicole Turgeon^d

^a Department of Economics, Texas Christian University, 2855 Main Drive, Fort Worth, TX, 76129, USA

^b Department of Economics, Hofstra University, Barnard Hall 200E, Hempstead, NY, 11549, USA

^c Department of Economics, University of California, Merced, 5200 North Lake Road, Merced, CA, 95343, USA

^d Department of Surgery, Emory University, 101 Woodruff Circle, Suite 5303, Atlanta, GA, 30322, USA

ARTICLE INFO

Article history:

Received 12 July 2017

Received in revised form 28 February 2018

Accepted 1 March 2018

Available online 7 March 2018

JEL Codes:

C91

D02

D71

I11

I28

Keywords:

Organ donation

Disincentives

Laboratory experiment

ABSTRACT

Our research utilizes the experimental economics laboratory to investigate the impact that reducing disincentives has on organ donation. The experiment consists of four treatments across different levels of donation related costs, which reflect the disincentives associated with being an organ donor. Our experimental results indicate that sizable increases in the organ donation rate are achievable if we reduce the level of disincentives present. The largest observed donation rates arise when a financial return is offered for being an organ donor, which is prohibited under the National Organ Transplant Act (NOTA), but nearly 80% of the gains observed under the positive financial incentives can be achieved if all of the disincentives are eliminated.

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1. Introduction

Patients waiting for an organ transplant currently face a massive shortage of organs in the United States; the rift between supply and demand is growing and straining our health care system. Currently, there are over 114,000 individuals waiting for an organ transplant; whereas, in 2017 there were only 34,769 transplants conducted (OPTN and SRTR, 2018). During this same time period, 59,643 people were added to the waiting list and another 12,548 were removed either because they passed away or were too sick to receive an organ transplant (OPTN and SRTR, 2018). Although economists have advocated for the formation of an organ market to alleviate this pressure (Becker and Elias, 2007),

there is still a growing concern regarding the ethical nature of forming a market (Pellegrino, 1991; Delmonico et al., 2002; Israni et al., 2005; Steinbrook, 2005; Rothman, 2002). Other economists go further and describe an organ market as morally repugnant (Roth, 2007). Furthermore, the National Organ Transplant Act (NOTA) forbids financial incentives for organ donation; thus, this debate remains academic. Recognizing the ridged political environment, recently researchers focus on the costs of being an organ donor, with many hypothesizing that reducing donation costs will increase donation rates (Satel, 2009; Delmonico and Capron, 2015; Satel, 2015; Summer, 2015; Held et al., 2016).

Our research uses the experimental economics laboratory to investigate this hypothesis through the development of an experimental setting that is analogous to organ donation. To the degree that our experiment mimics organ donation decisions in the real world, we find that, although positive incentives, prohibited under NOTA, generate the largest gains in organ donation, eliminating the costs of being an organ donor generates almost 80% of the gains under the positive incentive structure. From a policy perspective these results may signal the existence of sizeable improvements in donation registrations, which do not violate the provisions of NOTA. However, these potential benefits

[☆] The authors gratefully acknowledge the professional support in the laboratory from the Experiment Economics Center (ExCEN) at Georgia State University. The authors also wish to thank Mario Macis and Judd Kessler as well as the co-editor and two anonymous referees for their valuable comments and suggestions. All errors and omissions remain the authors' responsibility.

* Corresponding author.

E-mail addresses: z.hawley@tcu.edu (Z. Hawley), Danyang.Li@hofstra.edu (D. Li), kschnier@ucmerced.edu (K. Schnier), nturgeo@emory.edu (N. Turgeon).

depend explicitly on our ability to accurately lower the relevant costs within the real-world organ donation setting.

A morally repugnant market arises when three conditions are present: (1) we objectify a good because it now has monetary value, (2) there exists the potential for coercion and exploitation of the poor via the market, and (3) we create a slippery slope when monetizing a particular good (Roth, 2007). These, combined with the ethical arguments highlighted, are all factors that can be used to rationally explain the lack of financial incentives for organ donation in the United States today. In addition, others have opposed using financial incentives because they believe it would crowd out altruistic donors and generate a net reduction in the number of organs provided for transplantation (Rothman and Rothman, 2006; Danovitch and Leichtman, 2006).¹ This argument, as noted by Lacetera et al. (2014a), is consistent with the economic modeling of prosocial behavior, in which it is possible for prosocial behavior (here the act of organ donation) to be crowded out by the extrinsic benefits that one derives from taking a prosocial act (Benabou and Tirole, 2006).

The use of financial incentives for organ donation is not restricted globally, however “morally repugnant” factors have arisen in these markets. The two most studied markets are those in Iran and India and involve living organ donation (Zargooshi 2001a, 2001b; Goyal et al., 2002). In Iran the donors were primarily motivated by financial need and they experienced a high-degree of post-transplant depression. In fact, a large number of the former donors were ex-post opposed to the use of financial incentives for organ donation and felt judged by their peers for electing to donate for financial reward (Zargooshi 2001a, 2001b). Focusing on the donor aspects of the market in India, Goyal et al. (2002) conducted a survey of 305 donors who received a financial incentive for their organ. Most of the donors cited the need to pay debts as the reason for donating. Of those who sold their kidneys 86% reported a deteriorated health status, and many of the donors reported a loss in income following donation. Lastly, 79% of the donors would not recommend that someone sell their kidney (Goyal et al., 2002).

On the topic of crowding out, Byrne and Thompson (2001) modeled an individual's incentive to become a deceased donor and the subsequent donation decisions overseen by family members to illustrate the possibility of a negative supply effect resulting from financial incentives. Central to their argument is that the presence of a financial incentive muddies the signal of the deceased donor's preferences that are to be interpreted by their family members, who are subsequently responsible for making the donation decision. Eliminating these perverse responses would require: (1) complete autonomy of registered donors and no potential for family override, and (2) everyone to be required to either register as a donor or non-donor. They also illustrate that a time inconsistency may arise and that the best way to handle this is to make payments posthumously.

Our research focuses on the role of reducing the disincentives associated with being a deceased organ donor. We design an experiment framed in terms of organ donation to test the impact of altering donation costs faced by potential organ donors. To the extent that financial disincentives are a good proxy for the kinds of costs faced by prospective donors, we find reducing these financial disincentives can encourage donation. Disincentives encompass both psychological and financial costs that are born by the decision agent and the true costs associated with organ donation, especially the psychological costs, are hard to measure. We impose monetary costs in the experiment to merely model the incentives in organ

donation. The experiment we conduct concentrates on deceased donation and meets the design requirements outlined by Byrne and Thompson (2001). In the context of deceased organ donation, the psychological costs may include: the interactions between ones' personal preferences and their loved ones, ones' thoughts regarding their own death, ones' struggle with balancing the needs of others (e.g., patients on the waiting list) and their own cultural and/or religious identity, and ones' concerns about their doctor's incentives if they know the patient is an organ donor.²

Potential ways to lower these costs include additional education regarding organ transplantation and its benefits, developing alternative signaling mechanisms regarding one's donation wishes and perhaps changing organ donation defaults (e.g., utilize an opt-out donation policy). The list of potential psychological costs is numerous and in the context of deceased organ donation possibly greater than the financial costs.³ Financial costs may include registration costs and those costs that fall more on the deceased's family such as changes in funeral plans resulting from organ donation and the interactions with the doctors and organ procurement organization in their efforts to elicit donation.⁴ Reducing financial costs are easier than psychological costs as financial incentives can be utilized. Our experiment does not endeavor to capture these psychological and financial costs precisely but to proxy for them through the experiment's incentive structure. Therefore, we focus more on the incentive structure than the actual real-world donation related costs.

In our experiment we are unable to isolate costs that are psychological and financial and we lump them into one induced cost. This is a limitation, but in reality the balance of these costs and their relative importance to any one person is highly variable. Therefore, for the context of our experiment it is rational to lump them together as one induced cost. This said, the relative weight between psychological and financial costs is an important distinction from a policy perspective because the mechanism used to lower these costs may be different. As mentioned earlier, psychological costs may be lowered through education, training and perhaps stronger signaling of preferences and financial costs can be alleviated through direct financial exchange. The relative weight assigned to psychological and financial costs will dictate the most effective mechanisms to reduce disincentives for a potential donor. It is also an open question the degree to which psychological costs can be compensated for through financial returns. Lastly, it is possible that these costs come at different stages of the decision process (i.e., pre-registration, registration, signaling to family members, post-registration, etc.). Our experiment captures part of this by dividing the costs between the registration and donation stage, but is still limited in its ability to accurately reflect real-world donation related expenses.

Fig. 1, adapted from Gaston et al. (2006) and Epstein (2008), graphically illustrates the motivation for our research design.⁵ The current quantity supplied of deceased donor organs is represented by q_1 as donors currently incur substantial psychological and

¹ Titmuss (1970) was one of the first to bring forward this concept with blood donation. However, the recent economics literature in this area does not support this hypothesis (Lacetera et al., 2014a).

² In a recent survey conducted by Donate Life America, they found that 52% of respondents believed doctors may put in less effort to save them if they are registered organ donors and 61% believed that they might have their organ harvested when they might still come back to life (Donate Life America, 2010).

³ The financial costs associated with being a living organ donor are substantially different than those of a deceased organ donor. For a more detailed discussion of living organ donation and the financial disincentives present see Schnier et al. (2018).

⁴ Deceased organ donation is overseen by 58 regional donor service areas in the United States, each with their own organ procurement organization (OPO). The OPO coordinates the donor requests and the placement of donated organs.

⁵ Gaston et al. (2006) and Epstein (2008) focused on living organ donation. However, their graphical illustrations of organ supply can easily be adapted to represent deceased organ donation.

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