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Do market incentives crowd out charitable giving?

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ABSTRACT

Donations and volunteerism can be conceived as market transactions with a zero explicit price. However, evidence suggests people may not view zero as just another price when it comes to pro-social behavior. Thus, while markets might be expected to increase the supply of assets available to those in need, some worry such financial incentives will crowd out altruistic giving. This paper reports laboratory experiments directly investigating the degree to which market incentives crowd out large, discrete charitable donations in a setting related to deceased organ donation. The results suggest markets increase the supply of assets available to those in need. However, as some critics fear, market incentives disproportionately influence the relatively poor.

1. Introduction

Demand for organs has outpaced donor supply to the point that more than 100,000 people in the United States in need of an organ transplant are currently on a waiting list.[2] In fact, over 6000 Americans die each year while on the waiting list for organ transplants.[3] Around the world, societies are grappling with ways to reduce the shortage of transplantable organs. Some countries have introduced "presumed consent" or opt-out policies for cadaveric organ donation (see Abadie and Gay, 2006; Mossialos et al., 2008), and others have begun offering waiting list priority to registered donors (see Kessler and Roth, 2012). Another possible approach to solving the organ shortage is the creation of a market for body parts. Since a donation can be viewed as a market transaction with a price of zero, proponents have argued that providing monetary incentives to increase the supply of transplant organs would alleviate shortages and supplement supply provided by altruistic donors (Arrow, 1972; Perry, 1980; Denise, 1985; Mahoney, 2000; Becker and Elias, 2007). In a recent field experiment, Lacetera et al. (2012) found that offering economic incentives increased blood donations. However, opponents of a market solution have argued that the commoditization of organs may actually crowd out altruistic motivations and thereby decrease the total quantity supplied (Titmuss, 1970; Singer, 1973; DeJong et al., 1995; Byrne and Thompson, 2001). Others have highlighted the potential negative distributional consequences of organ markets by pointing to the injustice of a system in which sales are undertaken primarily by the poor and desperate (Borna, 1987; Archard, 2002; Satz, 2008).

Jasper et al. (2004) correctly point out that "nothing short of a market test can demonstrate conclusively the impact that incentives would have on the supply of donated organs." (p. 384), but for obvious reasons, policy makers are reluctant to implement such field experiments. However, the issue of whether or not markets crowd out pro-social behavior is much broader than the specific application of transplantable organs. In other settings there is evidence that market incentives crowd out donations and pro-social behavior. In a well-known study by Gneezy and Rustichini (2000), when a day care introduced small fines for parents who were late picking up their children, the number of children remaining late increased. This is despite the fact that the price for being late increased. Recent research by Falk and Szech (2013) also suggests that introducing market incentives reduces the price at which individuals are willing to allow laboratory mice to be killed. Similarly, Frey and Oberholzer-Gee (1997) report that survey respondents were less willing to tolerate hazardous waste in their community if

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[2] Statistic from US Department of Health and Human Services (http://optn.transplant.hrsa.gov/latestData/rptData.asp).
[3] http://organdonor.gov/about/data.html.

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the residents were to be compensated for its presence than if they were not. Frey (1997) argues that such behavior is being driven by both explicit market incentives and internal intrinsic motivations. Brekke et al. (2003) develop a model in which agents value their social responsibility, but this perceived responsibility varies with public policy decisions. Their model "implies that economic incentives for voluntary contributions may have adverse effects on contributions. Public policy affects behavior not only through its effect on relative prices and budget and/or time constraints, but also through the policy's effects on individuals' perception of the morally ideal action." (p. 1969).

Bénabou and Tirole (2006) develop an alternative model where the motivation to charity is based upon how others view the decision maker. They argue that the introduction of explicit rewards for pro-social behavior could discourage the behavior if others are likely to perceive that the person is engaging in the ostensibly pro-social act in order to take advantage of the explicit rewards. Ariely et al. (2009) find support for this type of motivation in a lab experiment varying the observability of gifts to charities. Similarly, several other studies have found that people behave in a more pro-social manner when their actions can be observed, which provides additional evidence that they are concerned with how others perceive them (see Andreoni and Petrie (2004) and Soetevent (2005) for lab and field evidence, respectively).

This paper adds to the literature exploring the degree to which market incentives crowd out one kind of pro-social behavior in a context where the extrinsic motives are endogenously determined by a market, and agents have complete information about the benefits of their pro-social behavior. In particular, our experiment provides a direct test of the hypothesis that markets crowd out charitable giving in a setting that captures some of the important aspects of deceased organ donation. Subjects choose whether to donate (or sell) a high-value, discrete asset upon their "death". As such, we abstract away from the costs and risks associated with live donations. However, to keep our design simple, we also abstract away from issues of compatibility, quality, and priority which are important concerns in cadaveric organ donation. One important issue that we address directly is the concern expressed by many opponents of organ donation that market incentives may disproportionately impact the relatively poor. Our design allows us to evaluate whether market incentives have differential effects across (experimentally induced) relative wealth levels. Given the level of abstraction and the relatively small stakes of the laboratory, we realize that some readers may not agree with our preferred interpretation that our setting reasonably approximates cadaveric organ transplant. Of course, any laboratory experiment or theoretical model must make abstractions, and we believe that our setting captures the general properties of large, discrete donation decisions for assets that outlive their usefulness to their current owners, of which organ transplants from the deceased are but one example.

The next section describes the experimental design used to address these issues. A separate section discusses the behavioral findings that markets need not crowd out donations, but do disproportionately induce the poor to participate. A final section concludes.

2. Experimental design

To explore the impact of market incentives on pro-social behavior, we employ a 3×1 between subjects experimental design where we vary the economic incentives of engaging in pro-social behavior using an overlapping generations framework. In this setting, each person is endowed with an asset that will generate a payment for either one or three periods, but each person is only able to claim payoffs for up to two periods. After receiving two payments, those with an asset that lasts for three periods can transfer it to someone whose asset only lasts one period and thus could claim an additional payoff. The asset can be thought of as any large, discrete item that has value to someone else beyond the point that it holds value to the original owner, such as an organ. The cost of donation borne by the original owner is sufficiently low so that there is a clear increase in social welfare from doing so. This cost can be thought of as the hassle of registering as a donor or as disgust at the thought of having one's organ harvested.[4]

In each laboratory session there are ten subjects who take turns being active for two periods. This framework allows us to collect multiple observations from each individual and provides an intuitive means for subject to understand the structure of decision problem. In the first period of a session there are three "Young" people and three "Old" people. The other four people are inactive.[5] In the second period, three of the people who were inactive in the first period become "Young," the three people who were Young in the first period become Old, and the three people who were Old in the first period become inactive. This process repeats after each period and is summarized in Fig. 1 from the perspective of a single subject. To avoid issues associated with repeated play games, each Old person must be inactive for one period before becoming active again, the number of inactive people is larger than the next generation, and there is no way to identify other people across lives.[6] Furthermore, subjects are paid based upon *one* randomly chosen life.

Each period that an active subject holds a useable asset they receive a specified payment, but the payment depends on the subject's type. Half of the subjects in the session are "Wealthy" and half are "Poor." Wealthy people receive a payment of \$8 for holding a useable asset when they are *Young* and \$5 for holding a useable asset when they are *Old*. Poor people receive a payment of \$2 for holding a useable asset when they are Young and \$5 for holding a useable asset when they are Old. Thus, both Wealthy and Poor people have the same value for a useable asset when they are Old. This is a critical feature of the design so that income levels do not affect the social gains that occur from the transfer of an asset while still allowing for endogenous wealth differences. Inactive people cannot hold any assets. Each subject remains Poor or Wealthy throughout the entire experimental session; thus generations may differ in the number of Wealthy and Poor people.

The two types of assets were denoted as yellow and green. Yellow assets last for one period. Green assets last for two periods before turning yellow and lasting one additional period. After one period yellow assets become red assets, which have a value of \$0 to both agent types. In each new generation, two of the four inactive people are endowed with new green assets and one person is endowed with a yellow asset; hence the 50% and 25% chance of receiving a green or yellow asset respectively in Fig. 1. In this way there are always two people who could transfer an asset to someone to someone in need of one.

[4] Even for live donations such as kidneys where the nominal cost may be quite high, in relative terms these costs are small compared to the value created for the recipient. Given the types of costs that are being modeled, the donor bears the cost whether or not anyone actually uses the asset. The hassle of giving furniture to a charity does not depend on whether or not the furniture is used in the future, and any psychological cost incurred while alive associated with agreeing to be an organ donor at death is not refunded if one's organs are not harvested. For simplicity, recipients bore the same cost from being willing to receive an asset. This cost can be thought of as a loss of pride in having to get help or psychological disgust in the case of taking steps to receive someone else's organ.

[5] While the experiment was conducted in a neutral frame, terms such as "Young" and "Old" were used to facilitate subject understanding of the decision problem.

[6] This approach is commonly used in macroeconomics experiments where the economy outlives individual agents. See e.g. Lim et al. (1994), Marimon and Sunder (1994), and Marimon et al. (1993).