

More Money, More Problems?

Can High Pay be Coercive and Repugnant?

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Sometimes two people would *voluntarily* agree to transact a good or service for compensation, but an unaffected third party would prefer to prevent this transaction. Paid kidney donation, surrogate motherhood, prostitution, and paid participation in medical trials are examples. We use a vignette study to explore how respondents' assessments of such *repugnant transactions* change as we alter the seller's compensation.¹ We then sketch a model of how people judge the morality of such transactions.²

We focus on a single repugnant transaction involving two parties, for which standard economic theory provides no arguments as to why it should not occur. Specifically, there are no

material negative externalities.³ By considering a *single* transaction we also abstract from general equilibrium effects.⁴ We focus on the seller of the good and not the buyer.

Our survey concerns paid participation in medical experiments. The extant legislation and literature cautions against substantial monetary compensation for participation, particularly for the socioeconomically disadvantaged. For instance, the National Bioethics Advisory Commission (2001), writes "*[B]enefits threaten [...] the voluntary nature of the choice, [...] raise [...] the danger that the potential participant's distributional disadvantage could be exploited [and] [...] lead some prospective participants to enroll [...] when it might be against their better judgment and when otherwise they would not do so.*" The medical ethics guidelines of jurisdictions as diverse as the European Union, India, and Kenya contain such language.

For economists, these arguments are hard to

¹ We defer the harder question of why transacting one good or service is widely viewed as repugnant whereas a closely related transaction is not (e.g. surrogate motherhood and external childcare).

² Repugnant transactions have been studied in the moral philosophy literature. Examples include Debra Satz (2010), and Michael Sandel (2012). Alvin E. Roth (2007) views repugnant transactions from a market design perspective. Due to the dearth of empirical data, we ran the survey before developing the model.

³ A transaction exerts *no material externalities* on a third party *C* if *C* cannot infer whether or not it occurred, unless an external source informs him about it. In particular, given *C*'s ex ante beliefs about the likelihood of the transaction, *C*'s utility is unaffected by its occurrence unless he learns about it through an external source.

⁴ See e.g. Kaushik Basu (2007).

understand. According to revealed preference theory, enlarging an agent's choice set can only make him better off. Hence preventing transactions that have no negative material externalities cannot improve welfare.

We wish to understand whether there is a widespread perception in the population that high payments for participation in clinical trials are ethically inappropriate, and if so, why?

I. Survey

We presented 1445 subjects on Amazon Mechanical Turk with a fictitious medical trial that compensates participants with \$50, \$1,000, or \$10,000. The trial was described as a test for side-effects of a vaccine that requires a total of 40 hours of a participant's time, and was characterized as low but non-zero risk. Each respondent was randomly displayed one of the three payment amounts and answered several questions, before answering the same questions for each of the remaining amounts. The last page of the survey *directly* juxtaposed the three payment amounts, as well as the policies of paying \$0 and covering participants' opportunity costs.⁵ Respondents rated the ethical appropriateness of each of these on a scale of 1 to 7.

Since respondents might not independently

⁵ Israel reimburses living organ donors with an amount of money equal to 40 days of the donor's average income during the three months prior to donation.

think of pertinent ethical aspects in the 10 minutes typically spent on the survey, we provided 55% of them with the following argument (inspired by Satz (2010)), framed as a discussion between the designers of the study: "*Does [...] payment [...] draw people into the study [...] who do not entirely understand what they are getting into? [...] [Is the] decision to participate [...] truly voluntary when a substantial payment is offered?*"⁶ The remaining respondents were not shown any arguments.

A. Results

We use respondents' answers in the direct juxtaposition to categorize them as one of three types. *Libertarian* types consider a payment of \$10,000 strictly more ethical than a payment of \$1,000. *Paternalistic* types make the opposite assessment. The remaining subjects consider both equally ethical. When (no) arguments were provided, (57% and 14%) 34% and 27% of respondents were classified as libertarian and paternalistic types, respectively.

Figure 1 plots respondents' reactions to varying payment amounts separately for libertarian and paternalistic types. As this graph only uses the first stage of the survey, each re-

⁶ In the direct juxtaposition, these respondents additionally read: "*[...] the Institute might entice women to participate in the study who don't fully understand what they are getting into. [...] might lead people to participate in the study who would not otherwise choose to do so.*" The full text of the survey is in the online-appendix.

spondent appears for at most one payment amount. Since providing the arguments only affects the frequencies of the types, but not their reaction to variation in payments, we pool over this dimension.

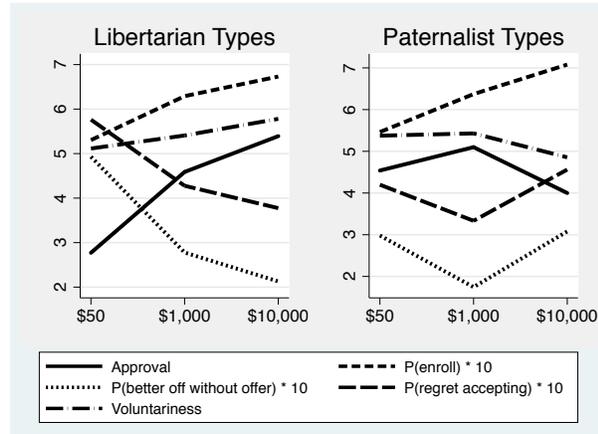


FIGURE 1. APPROVAL AND BELIEFS OF LIBERTARIAN AND PATERNALIST TYPES

Both types believe that higher payments are more effective incentives ($p < 0.1$).⁷ They differ, however, in their assessment of the associated welfare consequences. When the payment is \$10,000 rather than \$1,000, libertarian types think that prospective participants would less likely be better off if the offer had never been made ($p = 0.03$), less likely to regret accepting the offer ($p = 0.02$), and consider the decision to accept more voluntary ($p = 0.01$). The opposite comparative statics apply to paternalistic types ($p \leq 0.01$ in all cases), consistent with the hypothesis that they believe that larger monetary incentives decrease the quality of decision making. Consequently, lib-

⁷ The results for the remaining respondents are intermediate. See the online appendix.

ertarian (paternalistic) types state that as a member of the IRB they would be more (less) likely to approve the study if the incentive is \$10,000 rather than \$1,000 ($p = 0.00$ for both types).⁸

A majority of both libertarian and paternalistic types consider some form of payment more ethical than purely voluntary participation (94% and 66%, respectively); disagreement mainly concerns the appropriate amount. Both types agree on the directional effects of increasing incentives from \$50 to \$1,000 on all variables considered, but paternalist types are generally more approving of the \$50 incentive than non-paternalist types ($p = 0.00$). They also consider it less likely that a participant would regret accepting such an offer ($p = 0.00$).

Respondents' own characteristics are predictive of their type. Higher income, higher education, and higher age all increase the likelihood that a respondent is a paternalistic type ($p < 0.1$, 0.05, and 0.05, respectively). The 56% of respondents who claim to have "*thought about participating in a medical research study as a means to earn money*" are more likely paternalistic types ($p < 0.05$), an effect comparable to an increase in annual household income by \$60,000 - \$80,000.

⁸ This variable is different from the one used to define the types, and hence shows the individual consistency of the types.

II. Sketch of a Model

A pool of prospective sellers s is offered \bar{m} units of money in exchange for an amount \bar{x} of a good such as health. An observer o judges the morality of the offer by judging the expected welfare of a participant. For simplicity, we abstract from consideration of the buyer. Agent i 's endowment is (x, m_i) and his utility from x units of health and m units of money is $U_i(x, m_i) = a_i u(x) + v(m_i)$ with $v'(\cdot) > 0$ and $v''(\cdot) < 0$. There is heterogeneity in both a_i and m_i . The distribution of sellers who participate is the population distribution conditional on being willing to participate. The observer is richer than all sellers ($m_o > m_s$). He does *not* form his judgment by assuming that the seller's choice is utility maximizing. Instead, he *partially* takes the seller's perspective, and asks how he would feel if he had to live with the seller's choice. Formally, he judges welfare from the point of view of a seller with monetary endowment $m_p = \rho m_s + (1 - \rho)m_o$, where $\rho \in (0, 1)$ parameterizes the extent to which the observer takes the seller's perspective.⁹ Assessed welfare is $w(\bar{x}, \bar{m}) = a_s u(x - \bar{x}) + v(m_p + \bar{m})$.

The morality of the transaction is $M(\bar{x}, \bar{m}) = E[w(\bar{x}, \bar{m}) - w(0, 0) \mid U_s(x - \bar{x}, m_s + \bar{m}) \geq$

⁹ In the online appendix we study the case in which the observer also only partially takes the seller's perspective regarding the preference parameter a .

$U_s(x, m_s)]$. Since the observer correctly predicts the sellers' behavior, it is possible that $M < 0$, in which case the transaction is considered repugnant.¹⁰

A. Implications

We first study the effects of incentivizing a given seller, and then consider selection.

Incentivizing the sale of a larger amount \bar{x} is judged as less moral.¹¹ Because the observer has a lower marginal utility for money than the seller, he judges a transaction that makes s just willing to accept as a bad deal, and more so, the larger the amount of x sold. In line with our survey results, this comparative static is stronger the richer the observer. By contrast, paying the seller a higher amount for providing the same amount \bar{x} is judged as more moral. High payments are not regarded as unethical *per se*, but only to the extent that they *incentivize* a transaction.

The observers' judgments are tied to endowments: M is decreasing in his own endowment; and conditional on the seller being just willing to participate, it is increasing in

¹⁰ Offering a transaction to a prospective seller can be unethical *only* if the observer judges the seller according to a standard different from the one he uses to predict his behavior. Plainly, partial perspective taking implies that the observer would never participate in a transaction that he finds repugnant, but may refuse to participate in a transaction that he does not find repugnant.

¹¹ Formally, increasing \bar{m} and varying \bar{x} such that the seller's utility from accepting the transaction is unchanged decreases M . All proofs are in the online appendix.

the seller's endowment if $v''(\cdot)/v'(\cdot)$ is non-decreasing.¹² In line with the first of these implications, we find that as a member of the IRB, survey respondents would be less likely to approve of the \$10,000 payment the higher their income.¹³ The second explains why medical ethics guidelines are particularly concerned about incentivizing socioeconomically disadvantaged populations.

Regarding market design, the model implies that in-kind incentives will be judged as most ethical. Once there is no tradeoff between good x and money, there is no scope for disagreement about the appropriate rate of substitution.¹⁴ The model also explains why 73% of our survey respondents consider remunerating subjects with the opportunity costs as worse than either paying \$1,000 or \$10,000.¹⁵ Starting from two prospective sellers with different endowments $m_1 < m_2$ who are given the respective least amount of money $\bar{m}_1 < \bar{m}_2$ that just makes them participate, \bar{m}_1 can be increased to \bar{m}_2 without affecting any participation decisions. Since high payments are viewed as unethical only to the extent they serve as incentives, this increases M .

¹² This holds, for example, for CARA or CRRA utility functions.

¹³ In the regression of this variable on the logarithm of income we find a negative coefficient ($p = 0.07$).

¹⁴ In-kind compensation occurs, for example, in kidney exchange. A richer model would introduce room for disagreement by allowing the observer's preferences for good x to differ from the seller's.

¹⁵ 87% and 69% amongst libertarian and paternalistic subjects, respectively.

When allowing for selection, increasing payment has three effects. (i) Sellers who would have participated anyway now receive a larger consumer surplus. (ii) Richer sellers, who would not have participated before, now do. (iii) Sellers with higher a_s now participate. The first two effects increase M . The third is akin to incentivizing a larger amount \bar{x} and decreases M . The total effect depends on the population distribution of a_s and m_i , and can take the hump shape observed for paternalistic-type survey respondents.

Further empirical research may study the attitudes of target experiment participants regarding these issues.

REFERENCES

Basu, K. (2007). *Coercion, contract and the limits of the market* (Vol. 29). Soc Choice Welfare .

National Bioethics Advisory Commission. (2001). *Ethical and Policy Issues in Research Involving Human Participants*. Bethesda, MD.

Roth, A. E. (2007). *Repugnance as a Constraint on Markets* (Vol. 21). Journal of Economic Perspectives.

Sandel, M. J. (2012). *What Money Can't Buy. The Moral Limits of Markets*. New York.

Satz, D. (2010). *Why Some Things Should Not Be For Sale. The Moral Limits of Markets*. Oxford University Press.

