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A Market for Time
Fairness and Efficiency in Waiting Lines

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A Market for Time*

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Abstract
In situations of excess demand, many firms use waiting lists to allocate products and services among their customers. The resulting allocation is likely to be inefficient, creating opportunities for Pareto improving trades among those who are waiting in line. Yet, in the queuing context, the trading of places is rare and inefficiencies often persist over time. In this paper, I report the results of a field experiment which allows randomly selected customers to earn up to $10 for letting a stranger cut in line. The higher the offer, the more likely it is that individuals let someone cut in. But while a majority agrees to wait longer, only a small minority accepts the monetary reward. Trading in this market is constrained by multiple social concerns. The obligation not to exploit situations of excess demand and efficiency considerations influence the willingness to let a stranger jump the queue.

Keywords: Fairness, rationing, social norms

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1. Introduction

Even in advanced market economies, waiting lines are ubiquitous. Car dealerships deliver vehicles in the order in which they were purchased. At airports, passengers are by and large checked in in the order in which they arrive. Theme parks use waiting lines to allocate seats on popular rides. VeriSign, Inc., the Internet firm, has developed a service which allows parties to be next in line to obtain a currently used domain name once it is deleted from the registry. Call centers queue calls, and the organizers of sport and entertainment events typically sell tickets on a first-come, first-served basis. Government agencies and nonprofit organizations commonly use waiting lists to allocate scarce resources. Health services, housing vouchers, rooms in nursing homes, hangars at airports, and spots in day care centers are frequently made available in the order in which applications for these services were received. Universities use waiting lists to allocate seats in popular courses, student housing, books from the library and parking spaces. As many of these examples make clear, producers often use waiting lists in conjunction with pricing. When prices remain substantially below the market-clearing level, private-sector waiting lists can be quite long. Prospective US customers of Mercedes-Benz, for instance, are currently waiting two years for the delivery of the ML model and up to four years for an SL (Houston Chronicle, 2003).

Queues typically form when firms face unexpected shocks in the demand for their products. Theory also suggests a number of reasons why it can be efficient, at least ex ante, to keep prices persistently below market-clearing levels. For instance, queues might signal desirable product or firm characteristics (Banerjee, 1992; Slade, 1991; Haddock and McChesney, 1992), and rationing can be profit-maximizing if the demand by a typical consumer is positively related to the demand by others (Becker, 1991). Also, it is optimal to keep prices low if customers need to incur a fixed cost before they are able to use a product (Allen and Faulhaber, 1991).[1] While rationing can be efficient ex ante, the resulting waiting lines typically lead to an inefficient allocation of products and services ex post. The inefficiency arises because the positions of individuals in the queue do not reflect their opportunity cost of time (Gilbert and Klemperer, 2000).[2] As a result, many waiting lines create opportunities for Pareto improving trades. Yet, casual observation at least suggests that customers waiting in line seldom trade places in exchange for payment.

To better understand why markets for time rarely exist, it is useful to learn about the functioning of these markets. I study this question by offering customers who are waiting in line up to $10 for the right to jump the queue. As the added waiting time in my settings is fairly low (typically less than three minutes), one would expect many individuals to take up the offer to exchange increased waiting time for money.

I report three principal findings. First, the compensation offered in this field experiment has the expected incentive effect. The more generous the offer, the more likely it is that individuals let a stranger jump the queue. Second, while many subjects grant the request, few accept the monetary offer. Third, even among those who forgo the compensation, higher offers nonetheless lead to significant increases in the probability of letting someone cut in. Thus, prices play an unusual role in these exchanges. In

[1] Additional reasons for rationing are the effects of low prices on the quality of the customer pool (Stiglitz and Weiss, 1981) and situations in which a monopolist's marginal revenue increases in the quantity of goods sold (Wilson, 1988). Gilbert and Klemperer (2000) provide a more detailed discussion of the rationales for rationing.

[2] For extended waiting periods, differences in the opportunity cost of being without the desired product is another source of inefficiency.

economic theory, prices are indicators of scarcity and they compensate producers for the cost of making desired products available. As Adam Smith famously pointed out, it is the compensating function of prices, the profit motive, which guides production decisions and leads to an efficient allocation of resources. This insight stands at the center of economics. In the market for time studied in this paper, however, prices do not serve a compensating function, possibly because individuals view it as unfair to exploit a situation of excess demand (Okun, 1981; Kahneman, Knetsch and Thaler, 1986; Frey and Pommerehne, 1993). At the same time, most individuals act *as if they were compensated*, accepting price signals as indicators of scarcity and trading time when the welfare gains from doing so appear particularly large.

The present paper is part of a growing literature which studies the effect of fairness norms on individual decisions and market exchange (Bolton and Ockenfels, 2000; Charness and Rabin, 2002; Fehr and Schmidt, 1999; Konow, 2000, 2002). An important finding in this literature is that many individuals are ready to make sacrifices to change the pay-offs of other players. For example, there is ample evidence that subjects are willing to punish those who violate fairness norms (e.g., rejections in ultimatum games as in Güth, Schmittberger and Schwarze (1982) and punishment in public good games as in Fehr and Gächter (2000). Individuals also make helpful sacrifices if the welfare gains from doing so are particularly large (Andreoni and Miller, 2000; Charness and Grosskopf, 2001; Charness and Rabin, 2002). Decisions in the line experiment are a vivid real-world example for such helpful sacrifice. While social norms prevent individuals from accepting the monetary compensation – fairness considerations do limit profit-seeking activities – customers nevertheless prefer to wait longer if this helps a particularly hurried stranger. An interesting aspect of waiting lines is that those who let a stranger cut in impose a negative externality on others waiting behind them. I find that individuals' approach to the problem is similar to the one a social planner would take. The likelihood of being able to jump the queue increases in compensation offers but decreases in the size of the negative externality. In this market for time, the invisible hand is guided by multiple social concerns. Both the obligation not to exploit situations of excess demand *and* efficiency considerations influence the willingness to sell the right to jump the queue.

The remainder of this paper is organized as follows. Section 2 offers a brief discussion of queues and markets for time. Next, I describe the field experiment and report the results. Section 5 discusses the main findings, and Section 6 offers concluding remarks.

2. Theories of Rationing

When firms use waiting lines to allocate their products and services, customers can often undermine these lines. The re-sale of tickets for sports and entertainment events is one such example. Similarly, the person who registered the cd.com domain name is not using the site to sell music. Rather, the intention is to re-sell the name to those who value it most. While it is easy to see how economic forces can undermine the principle of first come, first served, many lines are surprisingly robust. Casual observation at least suggests that trading places is not common at airports and train stations, nor does it appear to occur often in theme parks, restaurants or in supermarkets with long check-out lines.

Why are positions in waiting lines not traded more often? There are three arguments which may help to understand the robustness of lines: the transaction costs of exploiting arbitrage possibilities, fairness concerns and the negative externalities created by some trading strategies. I discuss these arguments in turn. First, the transaction costs of trading can make it unprofitable to exploit differences in the opportunity cost of time and service. For example, customers who have been allocated a popular vehicle may have difficulty locating others who want the exact same car. Moreover, many arbitrage possibilities are limited by law, which further reduces the attractiveness of trading. For instance, most states in the U.S. impose limits on the profits that can be made from scalping tickets for sports and entertainment events (Ticket Action, 2002). Government and nonprofit organizations often prohibit the re-sale of rationed products and services, and some for-profit firms seem to actively discourage trading. For example, the Morgan Motor Company, whose customers wait about two years for their vehicle, categorically states in its sales material: "We are scrupulously fair in the allocation of cars and therefore there is no queue-jumping" (Morgan, 2003).

While trading can be expensive or even illegal, there exist many opportunities for beneficial exchanges that remain unexploited. This is all the more surprising as Internet auctions have drastically reduced the cost of identifying arbitrage opportunities. Yet, sports and entertainment ticket brokers aside, there appear to be few market places for trading goods in excess demand. For instance, it is notoriously difficult to reserve a table at America's best restaurants. Yet, a search on five popular auction sites (eBay, uBid, Bidz.com, Yahoo auctions and MSN auctions) as well as a general Google search resulted in no offers for reservations at top restaurants in New York City, Los Angeles, and Chicago.[3]

A second explanation for the lack of opportunities to jump the queue is that it is unfair to "exploit" individuals who are particularly hurried. A number of studies argue that *firms* do not increase prices in situations of excess demand because consumers view this as unfair and will take their business elsewhere if managers raise prices (Okun, 1981; Kahneman, Knetsch and Thaler, 1986; Frey and Pommerehne, 1993). These views are common: 68% of respondents in the United States declare it unfair to raise the price of flowers because of a holiday. In Russia, 66% hold the same view (Shiller, Boycko and Korobov, 1991).[4] Opportunities to jump the queue may rarely exist because these fairness standards do not only apply to firms but also to individuals waiting in line.

While the view that it is unfair to "exploit" customers with high opportunity costs appears plausible, the claim that waiting lines are a fairer allocation mechanism than markets is likely to come as a surprise to many students of fairness. Generally speaking, the efficiency of rules looms large in judgments of fairness. When asked to divide a cake, for instance, individuals find it fair to cut larger pieces for those who like cake better. In his comprehensive survey of positive theories of fairness, Konow (2002) shows that efficiency concerns are one of only three principal determinants of fairness

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[3] The search was conducted on 6 May 2003. Top restaurants are the two best restaurants as rated by Zagat. Many of these restaurants have months-long waiting lists. Others accept reservations for a limited period of time. For instance, the French Laundry in California accepts reservations only two months in advance, with the result that tables sell out within the hour.

[4] In laboratory experiments with simulated shocks on the supply side, sellers are slower to adjust prices to market-clearing levels and overall profits are lower when customers are aware of increases in the sellers' share of the surplus (Kachelmeier, Limberg and Schadewald, 1991; Franciosi et al., 1995).

judgments. Why then, one wonders, are queues, which typically result in inefficient allocations, seen as fairer than markets? And why should it be unfair to rearrange lines so that positions better reflect opportunity costs?

A third factor that may be important are the negative externalities that can result from trading in the queuing context. If customers voluntarily switch positions, the new order is more efficient than the original allocation. However, if an individual lets someone cut in, his decision creates a negative externality for those waiting behind him. Opportunities to jump the queue are perhaps rare because customers are not willing to impose a cost on others. To better understand the relative importance of transactions costs, fairness concerns and externalities, I conducted a simple field experiment that allowed customers waiting in line to sell the right to cut in.

3. The Line Experiment

When will a person waiting in line let someone jump the queue? Consider player 1, who is waiting in line. There are N individuals behind him. Player 2, a stranger, offers a monetary reward if player 1 lets him jump the queue. The payoff function for player 1 is

(1) $$U_1 = I(A \cdot (M - G(M)) + F(M) - E(N) - C).$$

$I \in \{0,1\}$ is an indicator which takes on a value of 1 if player 1 lets the stranger jump the queue and 0 otherwise. M is the monetary reward, G is a measure of guilt, and $A \in \{0,1\}$ shows if player 1 accepts (A=1) or rejects (A=0) the money. Standard theory suggests that he is always better off with A=1. However, if player 1 feels guilty when he exploits a situation of excess demand, accepting *M* is not as attractive and possibly reduces U_1. The decision rule in (1) accounts for the possibility that individuals feel guiltier if they accept higher rewards ($dG/dM \} 0$).

Monetary considerations aside, player 1 perhaps views letting the stranger jump the queue as an act of fairness, a favor to the person who is in a hurry. *F*(*M*) denotes this payoff. The fairness payoff is a function of *M* because the willingness to pay for a position in the line is an indication for the value of the favor.[5] *E*(*N*) is player 1's evaluation of the externality imposed on the *N* individuals behind him. Player 1 needs to wait longer in line if he let's someone cut in. This cost is denoted by *C*.

Player 1's strategy consists of a decision whether or not to let the person cut in (*I*), and whether or not to accept the money that is offered (*A*). He chooses the strategy that maximizes the payoff given in (1). The choices made are straightforward. Player 1 will let someone jump the queue iff $U_1 \varnothing 0$ for any strategy. Fairness enters the decision in three ways. First, player 1 might perceive it as unfair to make a profit by selling the right to jump the queue (*G*). These considerations make it less attractive to accept the money. Second, fair behavior often implies that differences in the valuation of goods be respected. Player 1 can construe his decision to let the buyer cut in as an act of fairness, a favor to a person who values time more highly than he does. Third, player 1 has to decide whether or not it is fair to impose an externality on those who are waiting behind him.

[5] If player 1 resents the rich – i.e. if *M* is seen as an indication of wealth – the likelihood of being able to cut in might decrease in *M*.

Experimental Design

To observe the willingness to accept additional waiting time in exchange for a monetary payment, we approached 500 individuals waiting in line at four different locations: a cafeteria at the University of Pennsylvania, a food court in the vicinity of the University, an Amtrak train station, and a Department of Motor Vehicles (DMV) service center. All locations are in Philadelphia. The experiments were conducted in the spring and summer of 2002. The ten experimenters are undergraduate and professional students and the author.

The experiment is simple. The experimenter walks up to an individual who is somewhere towards the front of the line and asks: "Can I go in front of you?" In some cases, the subject would ask why. The experimenter then responds: "I would like to pay faster." This is the only information that is given to the subject. There are five different treatments corresponding to offers of $0, $1, $3, $5 and $10. In the treatments with positive offers, the opening statement was: "Can I go in front of you, I pay you [$ amount]." The experimenter held the money in her hand to make the promise of payment credible. All subjects who wanted the money were paid immediately and in full.

4. Results

Table 1 provides summary statistics for the experiment. The majority of players (62%) granted the request to jump the queue. On average, subjects were fourth in line when we asked them to let us cut in. About five individuals were behind them in line.

Table 2 reports the fraction of requests that were granted by treatment. Higher offers lead to greater success. The fraction of requests granted rises from 45% in the treatment with no monetary incentive to 76% when we offered $10. It is rare, however, that those waiting in line sell the right to jump the queue. In the $1 treatment, 5 out of the 50 individuals who granted the request took the money. No subject accepted an offer of $3, even though 65 individuals granted the request. Among those who let experimenters jump the queue, no clear trend in the probability of accepting the money across the four treatments is discernible. 20% took the $5, 11% accepted $10.

The probability of being able to cut in is likely to vary across subjects, locations and experimenters. Given the categorical nature of the responses, I estimate probit models to control for these aspects (Table 3). The dependent variable takes on a value of one if the experimenter was able to cut in line. Specification (I) confirms that higher offers lead to greater success. Controlling for personal characteristics (students, sex, and race), place and experimenter fixed effects, a one-dollar increase in offers raises the likelihood of being able to cut in by 3.8 percentage points. Model (II) allows the effect of offers to vary more flexibly. I find that a $1 offer does not significantly increase the probability of being able to cut in. Relative to the treatment without money, however, an offer of $3 increases the chances of success by 19 percentage points. An offer of $5 or $10 raises the likelihood by almost 30 percentage points. There is no difference between the $5 and the $10 treatment (Prob > θ^2=0.95).

Specifications (III) and (IV) explore the importance of externalities. A larger number of people waiting behind the subject decreases the chances of being able to jump the queue. The effect of an additional person waiting behind the subject gets smaller as the line gets longer. In addition, player 1's position in line also influences his willingness to let a stranger jump the queue. The farther back the subject, the less likely it is that the experimenter will be successful. One interpretation of this finding is that player 1's position signals in how much of a hurry the stranger really is. If he were truly hard pressed for time, we would not expect him to try to cut in towards the end of the line. Alternatively, subjects who have a longer wait ahead of them might be less inclined to let someone cut in.

If subjects view it as unfair to burden those behind them, granting the right to jump the queue might impose a fixed cost on subjects that is independent of the number of people in line. To test this possibility, we approached the last person in line in 50 cases. Obviously, in these instances, externalities cannot play a role. As the results in model (IV) indicate, there appear to be no fixed costs of causing a negative externality. The estimated coefficient on the dummy variable for those who are not last in line is positive and far from statistical significance. Subjects continue to consider the number of people who are burdened by the decision to let someone jump the queue.

The payoff function in Section 2 suggests a dual role for monetary incentives. On the one hand, money represents an increase in income (M) and guilt (G). In addition, it can also signal the stranger's urgency, which may increase player 1's satisfaction from granting a favor (F). The estimated coefficient on the offer variable in models (I) –(IV) is the joint effect of income and fairness considerations. The sign of dF/dM can be identified, at least for a subsample of subjects, by focusing on the group who granted the request without taking the money. For these individuals, we know by revealed preference that accepting M does not make them better off $((M \; 4 \; G) \, \Omega 0)$. Consequently, they will choose I=1 if $F(M) \varnothing E \; 2 \; C$. In model (V) in Table 3, the dependent variable equals one if an individual granted the request without taking the money and zero otherwise. Observations from the $0 treatment are dropped because these subjects do not get to choose A. In this analysis, variation in I across monetary offers – if it exists – solely comes from individuals whose fairness payoff F depends on the size of the offer. The results show a significant effect of M on the probability of letting the buyer jump the queue, even though subjects end up not accepting the money. This finding is consistent with the idea that individuals care about the welfare implications of their decisions.

A final analysis explores why many individuals, having granted the right to jump the queue, refuse to accept the offer. A possible explanation for the decision to reject the payment is that subjects do not feel they truly own the right to let a stranger cut in because doing so imposes a negative externality on those behind them. Model (VI) in Table 3 explores this idea. The sample consists of individuals who let the experimenter cut in. The dependent variable is one if the subject accepted the money. Conditional on having granted the request, neither the size of the offer nor the negative externality can explain why subjects accept the monetary reward.[6] Thus, there is no evidence in the data

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[6] These estimates may not represent true population effects because we only observe for a subset of individuals (those with a strategy for which $U_1 \varnothing 0$) if they accept the monetary reward. To address this issue, I estimated a maximum-likelihood probit model with sample selection (Heckman, 1979), using the position in line and the place indicators as instruments. These variables are valid instruments because they are significant predictors in the selection, but not in the outcome equation. For the system, a likelihood ratio test cannot reject independence of the two equations (Prob>θ^2=0.6191), indicating that the estimates in Table 3 are not unduly biased due to selection effects.

that subjects are reluctant to accept the reward because they do not want to be compensated for an action that imposes costs on others. In contrast, personal characteristics, which generally were not strong predictors of the willingness to let a stranger cut in, significantly influence the decision to accept the monetary reward. In particular, students and women are much more likely to accept the money.

5. Discussion

The decision to let a stranger jump the queue in exchange for monetary compensation is critically influenced by three social considerations. In surveys, respondents claim that it is unfair to raise prices in situations of excess demand (Kahneman, Knetsch and Thaler, 1986; Frey and Pommerehne, 1993). As the queue experiment demonstrates, most individuals do indeed refrain from exploiting such a situation when given the opportunity to do so. Subjects pay up to $10 to live up to the rules of fairness.

Individuals also consider the negative externality that is associated with letting someone cut in line. This may reflect a genuine concern for the welfare of those at the end of the line or the fear that one of the waiting customers could "punish" the person who causes the negative externality. Perhaps surprisingly, the size of the externality does not explain individuals' inclination to accept the money. It does not seem to be the case that monetary exchanges are blocked because individuals do not truly own the right to let someone jump the queue.

Finally, subjects are more likely to let a stranger cut in if he offers more money. This even holds for those who end up not accepting the compensation. The decisions in the queue are consistent with recent experimental evidence which shows that individuals are willing to make (small) sacrifices when there are considerable welfare benefits from doing so (Charness and Rabin, 2002). As a result, the ability to cut in line is governed by the criteria that a social planner would take into account: Jumping the queue is permissible if the net welfare gains from doing so are large.[7]

While the data provide an interesting example for norm-constrained exchange, the observed behavior does not offer an obvious explanation why markets for time rarely exist. After all, most subjects are willing to let someone cut in, and the fact that jumping the queue is often free should only increase demand. To study the dynamic aspects of queuing decisions, I approached 15 subjects for a second time. 10 of them had previously accepted the money, 5 had not. All of them had let an experimenter cut in. I kept the value of the offer at the previous level. All 15 individuals rejected my request, most of them appeared upset, some angry, a few outright hostile, suggesting that it was probably not safe to continue the experiment.

The angry reactions suggest that even those who had accepted payment during the first encounter did not view the transaction as an ordinary exchange.[8] Rather, the willingness to let someone cut in seems to based on seeing the situation as exceptional. I conclude that it is difficult to trade places in queues because exchanges in this market are

[7] Of course, we do not know if welfare truly increased because the size of the negative externality is unknown. However, the shorter the line and the greater the willingness to pay to cut in, the more likely it is that aggregate welfare was in fact improved.

[8] The reactions are reminiscent of Durkheim's (1925) observation that people tend to respond with moral outrage and anger when social norms are violated.

viewed as one-time favors. Interestingly, this also seems to hold for individuals who had accepted the monetary payment.

6. Conclusion

There are many reasons why firms at times keep prices below market-clearing levels. The existing literature points to consumer heterogeneity, uncertainty and the rules of fair pricing as possible explanations why low prices persist over time. Firms, government agencies and nonprofit organizations deal with the resulting situations of excess demand by allocating goods and services on a first-come, first-served basis. One would expect entrepreneurs or consumers to engage in trades that improve upon the inefficiency that often characterizes waiting lines. But trading places seems to be rare.

In this field experiment, customers waiting in line are given the opportunity to sell the right to jump the queue. The resulting allocation of places is not unlike the outcome in a regular market, but the underlying forces are very different. Most individuals refuse to be compensated, and trades only occur because customers waiting in line are willing to make small sacrifices if the experimenter appears to be particularly hurried. While compensation is unacceptable to most – echoing the findings in surveys on fair pricing rules for firms – subjects read price signals as indicators for the stranger's opportunity cost of time. As a result, they are more likely to let him cut in if he offers more generous compensation.

The market for time created in this experiment is short-lived. Keeping offers at the original level, customers did not let me cut in more than once. This was true irrespective of whether or not subjects had originally accepted the money. Interestingly, this pattern of decision-making comes close to rules commonly used by government agencies and nonprofit organizations. Scarce resources are generally allocated on a first-come, first-served basis, but the rules are flexible enough to accommodate "special cases" and "emergencies." Nonprofits and government agencies let customers jump to the front of the queue when the welfare gains from doing so are particularly large.[9]

Many real-world situations are characterized by competing principles of fairness (Konow, 2002; Walzer, 1984; Young, 1993). As the queue-jumping example illustrates, some of these principles make it more difficult to achieve economic efficiency. For instance, the rules of fair pricing limit the set of feasible transactions. Other fairness standards, however, foster efficient outcomes even if the decision makers obtain no pecuniary gain from their actions. Subjects limit the size of negative externalities, and they react to price signals. Individual behavior in situations of excess demand is best understood as balancing these competing standards of fairness.

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[9] The allocation of day-care slots to single parents and the distribution of parking spaces to the handicapped are examples.

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Table 1 – Summary Statistics

		Full sample (N=500)	Grant request (N=311)	Do not grant request (N=189)
Grant request		0.62		
		(0.49)		
Take money		0.06	0.11	
		(0.23)	(0.31)	
Offer ($)		3.80	4.44	2.75
		(3.55)	(3.59)	(3.23)
Externality		5.28	4.96	5.79
(# people)		(2.61)	(2.50)	(2.71)
Position in line		4.39	4.27	4.60
		(1.43)	(1.37)	(1.51)
Student		0.48	0.47	0.50
		(0.50)	(0.50)	(0.50)
Female		0.68	0.68	0.69
		(0.47)	(0.47)	(0.46)
Race	Black	0.16	0.14	0.19
		(0.37)	(0.35)	(0.39)
	White	0.71	0.74	0.66
		(0.45)	(0.44)	(0.48)
	Asian	0.10	0.08	0.13
		(0.30)	(0.27)	(0.34)
	Latino	0.03	0.03	0.03
		(0.17)	(0.18)	(0.16)
Place	Amtrak	0.23	0.22	0.24
		(0.42)	(0.41)	(0.43)
	DMV	0.20	0.19	0.21
		(0.40)	(0.40)	(0.41)
	Food court	0.20	0.16	0.27
		(0.40)	(0.37)	(0.45)
	Cafeteria	0.37	0.42	0.28
		(0.48)	(0.50)	(0.45)

Table 2 – What fraction of requests are granted?

Offer ($)	# obs	requests granted	positions sold (of # granted)
no money	100	0.45 (0.5)	
$1	100	0.5 (0.50)	0.1 (0.30)
$3	100	0.65 (0.48)	0
$5	100	0.75 (0.43)	0.2 (0.40)
$10	100	0.76 (0.43)	0.11 (0.31)

Table 3 – Why do subjects grant the request?

	Dependent variable					
	Grants request?					Takes money?
	(I)	(II)	(III)	(IV)	(V)	(VI)
Offer	0.10				0.07	-0.02
	(0.02)**				(0.02)**	(0.04)
$1 offer		0.09	0.08	0.08		
[omitted $0 offer]		(0.18)	(0.19)	(0.19)		
$3 offer		0.57	0.63	0.63		
		(0.18)**	(0.19)**	(0.19)**		
$5 offer		0.95	0.83	0.83		
		(0.19)**	(0.19)**	(0.19)**		
$10 offer		0.93	1.04	1.04		
		(0.20)**	(0.20)**	(0.20)**		
Externality			-0.32		-0.15	-0.23
(# people)			(0.09)**		(0.10)	(0.18)
Externality			0.02		0.00	0.03
squared			(0.01)**		(0.01)	(0.02)*
Is not last person				0.11		
in line				(0.66)		
Not last Δ				-0.35		
externality				(0.18)*		
Not last Δ exter-				0.02		
nality squared				(0.01)		
Position in line			-0.28	-0.28	-0.20	0.10
			(0.06)**	(0.06)**	(0.08)**	(0.16)
Student	0.01	-0.08	-0.09	-0.09	-0.09	0.69
	(0.14)	(0.14)	(0.15)	(0.15)	(0.16)	(0.32)*
Female	0.04	0.07	0.16	0.16	0.18	1.63
	(0.14)	(0.14)	(0.14)	(0.14)	(0.16)	(0.63)**
Race Black	-0.30	-0.30	-0.38	-0.38	-0.49	0.52
[omitted White]	(0.18)	(0.18)	(0.19)*	(0.19)*	(0.20)*	(0.32)
Asian	-0.32	-0.30	-0.36	-0.36	-0.16	-0.20
	(0.19)	(0.18)	(0.19)	(0.19)	(0.23)	(0.46)
Latino	0.46	0.65	0.61	0.60	-0.11	
	(0.38)	(0.38)	(0.42)	(0.42)	(0.44)	
Place: Amtrak	-0.69	-0.70	-0.47	-0.48	-0.13	0.38
[omitted cafeteria]	(0.26)**	(0.26)**	(0.27)	(0.28)	(0.28)	(0.54)
DMV	-0.57	-0.58	-0.48	-0.49	-0.59	0.57
	(0.20)**	(0.20)**	(0.20)*	(0.21)*	(0.23)**	(0.43)
Food	-0.93	-0.98	-0.96	-0.96	-0.64	-0.05
court	(0.18)**	(0.18)**	(0.18)**	(0.18)**	(0.21)**	(0.38)
Experimenter (9 indicators)	Yes	Yes	Yes	Yes	Yes	Yes
# observations	500	500	500	500	400	266
Pseudo R^2	0.11	0.12	0.17	0.17	0.12	0.18

significant at 5% ** significant at 1%
Probit models: The dependent variable takes on a value of 1 if the subject grants the request (I-IV), grants the request but does not accept the money (V), and accepts the money (VI). Robust standard errors in parentheses.