Subjective Relative Income and Lottery Ticket Purchases

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ABSTRACT

Despite a return of only $.53 on the dollar, state lotteries are extremely popular, especially among the poor, who play the most but can least afford to play. In two experiments conducted with low-income participants, we examine how implicit comparisons with other income classes increase low-income individuals' desire to play the lottery. In Experiment 1, participants were more likely to purchase lottery tickets when they were primed to perceive that their own income was low relative to an implicit standard. In Experiment 2, participants purchased more tickets when they considered situations in which rich people or poor people receive advantages, implicitly highlighting the fact that everyone has an equal chance of winning the lottery. Copyright © 2008 John Wiley & Sons, Ltd.

INTRODUCTION

''All you need is a dollar and a dream'' is a catchy advertisement for the New York State Lottery that is typical of how lotteries are marketed. In the current paper, we ask why that dream seems to be particularly attractive to people with low incomes. Research on state lotteries finds that low-income individuals spend a higher percentage of their income on lottery tickets than do wealthier individuals (Brinner & Clotfelter, 1975; Clotfelter & Cook, 1987, 1989; Livernois, 1987; Spiro, 1974; Suits, 1977), a pattern highlighted by the statistic that households with an income of less than $10 000 spend, on average, approximately 3% of their income on the lottery (Clotfelter, Cook, Edell, & Moore, 1999). Some studies even find higher absolute demand for lottery tickets among low-income populations (Clotfelter et al., 1999; Hansen, Miyazaki, & Sprott, 2000; Hansen, 1995).

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The connection between lottery play and income is unfortunate because the purchase of lottery tickets by the poor can be considered a type of "poverty trap"—a cycle of inefficient behavior that prevents low-income individuals from improving their financial situations. State lotteries have the lowest payout rate of any form of legal gambling (Clotfelter & Cook, 1989) and provide a much lower rate of return than the assets that more affluent families tend to invest in. Over the years 1964–2003, the average expected value was −$.47 for each dollar spent on lottery tickets (LaFleur & LaFleur, 2003).[1] Moreover, poverty creates "smaller margins of error" so that behaviors, such as playing the lottery, which have a negligible effect on the financial well being of middle class persons, can have a profound impact on that of a poor person (Bertrand et al., 2004).

Given the compelling reasons *not* to play the lottery, why is lottery play so prevalent among low-income individuals? We propose that implicit comparisons with other income classes lead low income individuals to view playing the lottery as one of the few means available to attempt to "correct" for their low relative income status. After a brief review of studies examining the impact of relative income on happiness and behavior, we present two studies which test hypotheses that stem from this idea.

Relative income

Several lines of research in psychology and economics focus on the consequences of comparisons with others for affect and behavior. Social comparison theory (Festinger, 1954; Suls & Wheeler, 2000), equity theory (Adams, 1965), and relative deprivation theory (Crosby, 1976; Walker & Smith, 2001) all posit that people do not simply evaluate the absolute value of their income, performance, achievements, etc., but that these evaluations are heavily influenced by comparisons with others. Economic and decision research has incorporated the idea of relative standing in the formulation of social comparison-based utility functions (Loewenstein, Thompson, & Bazerman, 1989; Messick & Sentis, 1985), according to which disadvantageous, and in some cases advantageous, inequality reduces utility.

Research in both economics and psychology has found that happiness depends, in part, on relative standing (Frank, 1985). Easterlin (1974, 1995, 2001) finds that happiness is at best weakly related to changes in absolute income; within a nation, self-reported happiness remains stable over time, even when per capita income increases substantially. Similarly, over the life cycle, the increase in income that comes with middle age and the decrease in income commonly associated with retirement are not correlated with the changes in happiness. In contrast, within a country at one point in time, greater income is significantly correlated with greater happiness, suggesting that happiness depends, in part, on relative standing in the income hierarchy.

Further research has substantiated the claim that relative standing is a powerful predictor of happiness by examining income reference points set by relevant social comparison groups. Luttmer (2005) finds that, controlling for absolute income, high neighborhood earnings are associated with lower levels of happiness, an effect that is stronger for those who socialize more with their affluent neighbors as opposed to friends and relatives outside of their neighborhood. Hagerty (2000) finds that although a person's absolute income is the strongest predictor of income satisfaction, the income distribution of the community in which they live is also a significant predictor. Clark and Oswald (1996) observe no relationship between satisfaction and absolute income level, but find that income relative to co-workers has a significant effect on satisfaction. Solberg,

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[1]Given diminishing marginal utility, the situation appears even bleaker when the return on the lottery is viewed in terms of expected utility instead of expected value. The evidence is equivocal about whether winning actually even increases average utility. Gardner & Oswald (2007) find significant improvements in psychological stress with medium-sized lottery wins (up to $200 000). However, Brickman, Coates, & Janoff-Bulman (1978) find that lottery winners are no happier than people who did not win and winners actually take less pleasure in mundane everyday activities. Anecdotally, there is evidence that winning the lottery can be a stressful life event and even trigger a depressive episode (Nissle & Bschor, 2002).

Diener, Wirtz, Lucasm, & Oishi (2002) find that poor financial standing relative to others creates unmet desires, which partially mediates the effect of social comparisons on income satisfaction.

Since social comparisons of income and compensation have substantial influences on happiness and satisfaction, it is not surprising that they can be powerful motivators of behavior and influence decision-making. Many economists have theorized that people seek to compensate for a low relative income status by engaging in conspicuous consumption or working longer hours (e.g., Duesenberry, 1949; Frank, 1985; Veblen, 1934). Consistent with such predictions, Schor (1998) finds that people who perceive their financial situation to be below that of their reference group save significantly less than those who perceive it to be above that of their reference group. Bowles & Park (2005) demonstrate a similar effect on labor supply. Data on working hours from ten countries shows that greater income inequality is associated with longer working hours. Closely related, Neumark and Postlewaite (1998) find evidence that women whose sisters' husbands have a higher income than their own husbands are more likely to be employed.

Current studies

The motivation for our first study dates back to what may have been the first attempt by economists to understand lottery ticket purchases. Friedman and Savage (1948) proposed that normally risk-averse low-income individuals are motivated to play the lottery because they derive disproportionate utility from increases in income that could potentially propel them into the middle or upper class. We build on this theory—that the purchase of state lottery tickets, in part, derives from a desire to correct for low-income status—by positing that whether one considers oneself to have a low income is, in part, a *subjective* judgment which depends on explicit or implicit social comparisons, not merely the absolute value of one's income. Experiment 1 tests the hypothesis that inducing a person to view their relative financial standing in negative terms will increase lottery ticket purchases. Previous work has examined the relationship between absolute income and lottery ticket purchases; however, it is difficult to infer causality because relative income is in part endogenous (i.e., results from decisions made by the individual). In this study, we demonstrate causality by manipulating subjects' *subjective* feelings of poverty.

The motivation for the second study stems from the idea that low-income individuals may feel that their low standing in society prevents them from having the same opportunities as those with higher socioeconomic status. A game of chance, in a sense, levels the playing field and gives the poor the same opportunity to win as everyone else. This would make lotteries disproportionately attractive to low-income individuals, since they may feel they rarely get such fair odds *relative* to those from upper income classes. Thus, we test the hypothesis that being primed to judge the lottery as an ''equal-opportunity prospect'' for all class categories will increase lottery ticket purchases.

We studied a low-income sample because we wanted to understand what drives the purchase behavior of the poor, who experience a disproportionate adverse economic impact of playing the lottery. We conducted *framed field experiments* as defined by the criteria and terminology of Harrison & List (2004). The experiments were conducted with a subject pool chosen to represent the target population (low-income participants), using a commodity that is not artificial (actual state lottery tickets), and in a domain of behavior in which most of the subjects had prior experience and/or prior information.

EXPERIMENT 1: RELATIVE INCOME INDUCTION

Overview

Experiment 1 tests the hypothesis that people who feel poor in a relative sense due to implicit comparisons with others are more likely to purchase lottery tickets. The rationale behind this hypothesis is that lottery tickets may be seen as a means to correct for low-income status. This is similar to the conceptualization by

Table 1. Demographic information for Experiments 1 and 2

		Experiment 1	Experiment 2
No. of subjects		79 (39/40)	83 (41/42)
Age	Mean	40.2	29.4
	Median	38	24
	Range	18–78	18–62
Income	Mean	$29 228	$19 944
	Median	$20 000	$16 500
	Range	$0–$256 000	$0–$85 000
Education	At least college degree	19%	14.6%
	No college degree	81%	85.4%
Gender	Males	49%	61%
	Female	51%	39%
Race	African American	41%	48.2%
	Caucasian	49%	37.0%
	Hispanic	3%	2.5%
	Asian	4%	2.5%
	Reported "other"	4%	9.8%

Bowles and Park (2005) that forgoing leisure for longer workdays may be considered a means of correcting for lower relative income standing. It is also related to the idea proposed by Kahneman and Tversky (1979) that people tend to be risk-seeking when their wealth falls below some salient point of reference. We test this hypothesis in a controlled experiment that induces a subjective feeling of poverty.

Methods

Participants were recruited from the Greyhound Bus Station in downtown Pittsburgh, PA. The mean income of the sample was $29 228 and median income was $19 944 (see Table 1 for complete demographic information). Seventy-nine participants were asked to complete a survey which elicited their opinions about the city of Pittsburgh, in exchange for a $5 payment. The survey was not used for research purposes, but served as a pretense for paying them $5, which they could later spend on tickets. We had subjects "earn" the money, instead of merely endowing them with it, to reduce the house money effect. The house money effect describes the propensity for people to consume (Henderson & Peterson, 1992) or risk (Ackert, Charupat, Church, & Deaves, 2006; Thaler & Johnston, 1990) money that they have received as a result of a windfall. Although our procedure may not completely eliminate this effect, we feel that the results are still important even if they are only generalizable to lottery ticket purchases made with financial windfalls, gifts, bonuses, or when people feel they have "money to burn".[2]

After completing the survey, participants filled out demographic information on age, gender, race, marital status, and finally, income. Our relative income manipulation was embedded in the income question. By random assignment, half of the sample was induced to feel that their income was in the middle of the income range with the following question:

> *What is your yearly income (choose an income bracket):*
> ____*Less than $10 000*
> ____*Between $10 001 and $20 000*

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[2]Note also that almost all experiments conducted by psychologists and economists—including studies of risky decision making, experimental games, intertemporal choice and almost all other topics—involve "house money"; very few studies ask subjects to spend their own money.

____Between $20 001 and $40 000
____Between $40 001 and $60 000
____More than $60 000

The other half of the sample was induced to feel that their income was on the lower end of the income range with the following question:

What is your yearly income (choose an income bracket):
____Less than $100 000
____Between $100 001 and $250 000
____Between $250 001 and $500 000
____Between $500 001 and $1 million
____More than $1 million

This second version of the income measure was designed to induce the experience of *low relative income*.

Immediately after filling out the income question, participants were handed five $1 bills and then shown a Pennsylvania Lottery instant scratch-off ticket. They were told that the instant tickets were previously purchased for $1 each and that they could purchase between 0 and 5 tickets for $1 each. Finally, participants filled out additional demographic information.

Results

Participants who reported their income on a low scale (check at intervals between $10 000 and $60 000), designed to make they feel they had a *high relative income*, purchased .67 tickets on average. Participants who reported their income on a high scale (check at intervals between $100 000 and $1 000 000), designed to make them feel they have a *low relative income*, purchased 1.28 tickets on average. Figure 1 presents the frequency distribution of ticket purchases in the two conditions.

Since the dependent variable is an ordered categorical variable, we analyze the data using ordered probit. Specification 1 of Table 2 shows the marginally significant effect ($p < .09$) of the induction (coded 1 for subjective low relative income and 0 otherwise). Specification 2 contains only the dummy control variable, Chronic, which reflects self-reported lottery play in daily life (coded 1 if the participant normally plays the lottery at least a few times per month, 0 otherwise). Not surprisingly, chronic players purchased more tickets at a marginally significant level. After controlling for this factor, as can be seen in Specification 3, the relative
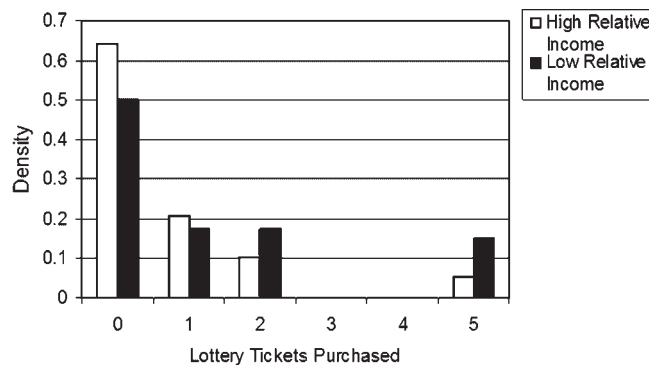

Figure 1. Histogram of lottery tickets purchased in Experiment 1: Relative income induction

Table 2. Ordered probit analysis on the number of tickets purchased in Experiment 1: Relative income induction

	(1)	(2)	(3)	(4)	(5)
Induction	0.45† (0.26)		0.56* (0.28)		0.71* (0.30)
Chronic		0.53† (0.33)	0.67* (0.34)		0.63† (0.36)
African American				0.30 (0.28)	0.39 (0.30)
College education				−0.32 (0.36)	−0.23 (0.38)
Age				−0.03 (0.04)	−0.03 (0.05)
Age^2				0.0004 (0.001)	0.0004 (0.001)
Pseudo R^2	0.016	0.014	0.038	0.017	0.062
N	79	77	77	75	75

Standard errors in parentheses.
$^†p ≤ .10$; $^*p ≤ .05$.

income manipulation becomes significant at the .05 level. Specification 4 includes various demographic variables: African American (code 1 if African American, 0 otherwise), College Education (code 1 if the participant had a college degree, 0 other otherwise), Age and Age^2. These variables were included based on results we obtained from a previous unpublished study in the same population and a national survey on state lottery players (Clotfelter et al., 1999). The coefficients of the control variables all have the correct signs, but are not significant. Specification 5 shows that the effect of the induction remains significant when all control variables are included in the estimation equation.

To interpret the estimated parameter coefficients, Table 3 presents the marginal probability effects of the relative income manipulation for specifications 1, 3, and 5 of the ordered probit analysis. The marginal probability effects show how the relative income manipulation affects the distribution of responses. For example, in the full model, we see that the relative income induction decreases the probability of purchasing zero lottery tickets by 27% and increases the probability of purchasing five tickets by 11% (see Specification 3 of Table 3).

Discussion

These results support the hypothesis that inducing people to perceive that their income is lower than some reference point increases their propensity to purchase lottery tickets. This manipulation does not force an explicit social comparison and the participant is very unlikely to be aware of the manipulation, as it is embedded in other demographic questions. Despite its subtlety, however, the experimental manipulation of

Table 3. Marginal probability effects of the relative income induction in Experiment 1

	(1) Relative income induction	(2) Relative income induction with chronic	(3) Relative income induction with all control variables
0 Ticket	−0.17† (0.10)	−0.21* (0.10)	−0.27** (0.10)
1 Ticket	0.04 (0.03)	0.05† (0.02)	0.07† (0.04)
2 Tickets	0.06 (0.04)	0.08† (0.04)	0.09* (0.05)
3 Tickets	—	—	—
4 Tickets	—	—	—
5 Tickets	0.08† (0.05)	0.09† (0.05)	0.11** (0.05)

Standard errors in parentheses.
$^†p ≤ .10$; $^*p ≤ .05$; $^{**}p ≤ .01$.

subjective poverty has a substantial effect. Ticket purchases were nearly doubled in the low relative income condition. Results support the idea that when people are made to feel subjectively poor, they view the lottery as a means to correct for their low-income status.

EXPERIMENT 2: THE LOTTERY AS A SOCIAL EQUALIZER

Overview

Experiment 1 presents evidence that lottery ticket purchases are driven in part by the perception of low relative income. But why should such a perception motivate the poor to resort to the lottery as a means to correct for their low standing? Prior research suggests that opportunities that ensure equality among different classes can be motivating for people who are usually discriminated against. In a study conducted with boys from different castes in India, Hoff and Pandey (2004) found that when the caste of each boy was announced, low caste boys performed worse on a pay-for-performance task. The authors theorized that the caste announcement triggers the belief in low caste boys that however good their performance, they will be rewarded prejudicially. This theory was substantiated by the finding that low caste boys performed better when the payment was determined by a *lottery* that selected one boy to be paid for his productivity at a very high wage, even though the caste of each boy was announced.

A similar logic can explain why low-income individuals have a particular affinity for state lotteries. Members of the lower class may feel that their low status prevents them from having the same opportunities as other members of society due to class discrimination or by virtue of having fewer monetary, educational, or social capital advantages. Lotteries may be considered a ''social equalizer'' in that, no matter what your position in society, everyone has an equal chance to win. The poor may feel that they are rarely given such fair odds *relative* to others in their daily life. Recognition of this fact could potentially make low-income individuals disproportionately motivated to play the lottery.

Methods

Eighty-three participants were recruited from the Greyhound Bus Station in downtown Pittsburgh, PA. The mean income of this sample was somewhat lower than in the first study, and the sample is younger, with a higher minority representation (see fourth column of Table 1).

As in Experiment 1, people waiting to board buses were approached to complete a short survey in exchange for $5. In the control condition, participants filled out the same survey from Experiment 1, which elicited their opinions about Pittsburgh. In the experimental condition, participants completed a survey which asked them a series of questions about whether a rich person, middle class person, or poor person would have an advantage or an equal chance when it came to eight different outcomes: (1) being awarded a scholarship, (2) wining playing a slot machine, (3) being elected mayor, (4) finding $100 on the ground, (5) becoming a superstar singer, (6) being a victim of identity theft, (7) getting a promotion, and (8) getting discounted housing. These events were deliberately chosen so that some would favor rich people (e.g., being elected mayor), some poor people (e.g., getting discounted housing), and some neither (e.g., win playing a slot machine).[3] Although we did not ask them explicitly whether a rich or poor person would have a better chance of winning the lottery, the questions—particularly the question about playing a slot machine—were intended to make respondents think about the fact that everyone would have an equal chance.

Immediately after they completed the survey, participants were handed five $1 bills as their payment and were given the opportunity to purchase lottery tickets. Next participants filled out demographic information.

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[3]Although it is not relevant to the focus of this paper, Appendix 1 reports the response frequency distributions for each item.

Results

The hypothesis that participants in the experimental group would purchase more lottery tickets compared to those in the control group was supported. Participants in the control group purchased .54 tickets on average while participants in the experimental group purchased 1.31 tickets on average. Figure 2 presents the frequency distribution of ticket purchases in the two conditions.

Again, we use ordered probit to analyze lottery ticket purchases. Specification 1 in Table 4 shows the significant effect of the social equalizer induction variable (coded 1 for the experimental group, 0 for the control group). Specification 2 includes the control variable, Chronic (coded 1 if the participant plays the lottery at least a few times per month, 0 otherwise). The coefficient of Chronic is in the right direction, but not significant, probably due to the low number of chronic players in this sample (16 participants). Specification 3 shows that the effect of the induction remains significant when chronic is included in the model. Specification 4 includes the same demographic variables as in Experiment 1. They are in the right direction, but not significant, and Specification 5 shows that the effect of social equalizer induction remains significant when all control variables are included in the model. Table 5 shows the marginal probability effects of the social equalizer induction for Specifications 1, 3, and 5 of the ordered probit analysis.

Discussion

These results support our hypothesis that low-income individuals may be particularly drawn to purchasing lottery tickets because lotteries afford them an equal opportunity of winning. They are likely to perceive the lottery as a rare opportunity to compete on equal footing with people who are more affluent. One potential criticism of this finding is that the induction materials introduce a number of ideas, about class, luck, ability, social equity, and therefore obfuscate the driver of our effect. We conducted additional analyses on the participants in the experimental condition only to bolster our claim that the effect is driven by the belief among the poor that a game of chance does not discriminate among classes but that upper and middle classes have an advantage when it comes to rewards based on ability.

This supplemental analysis uses the responses to the manipulation questions: ''Check which group is most likely to *win playing a slot machine*'' and ''Check which group is more likely to get a *promotion*.'' These two questions were chosen because the first measures the belief that all class categories are equally lucky and the second measures the belief that the middle and upper class have the advantage when it comes to receiving a reward based on ability. A variable was created by giving one point for reporting that all classes have an equal chance at winning playing a slot machine and one point for reporting that middle income and rich people were
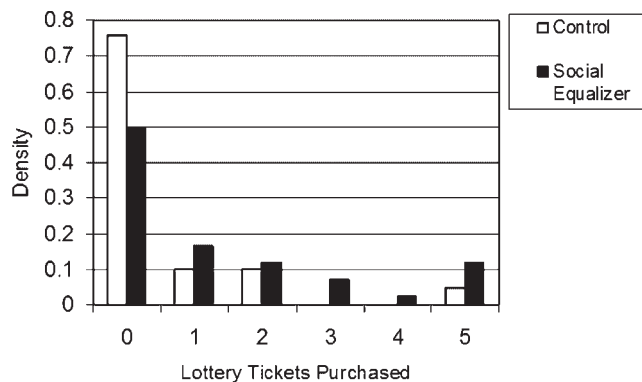

Figure 2. Histogram of lottery tickets purchased in Experiment 2: The lottery as a social equalizer

Table 4. Ordered probit analysis on the number of tickets purchased Experiment 2: The lottery as a social equalizer

	(1)	(2)	(3)	(4)	(5)
Social equalizer induction	0.67** (0.27)		0.65** (0.30)		0.67* (0.29)
Chronic		0.25 (0.33)	0.16 (0.33)		−0.01 (0.36)
African American				0.05 (0.28)	0.15 (0.29)
College education				−0.56 (0.46)	−0.63 (0.49)
Age				−0.08 (0.07)	−0.07 (0.07)
Age^2				0.001 (0.001)	0.001 (0.001)
Pseudo R^2	0.012	0.003	0.033	0.020	0.050
N	83	80	80	79	79

Standard errors in parentheses.
$^*p \leq .05$; $^{**}p \leq .01$.

most likely to get a promotion. This variable predicts ticket purchases in the experimental condition with ordered-probit analysis, though not at a significant level with a two-tailed test ($\beta = 0.42$, $z = 1.56$, $p = .11$).

CONCLUSION

These experiments shed light on the association between income and lottery play. It would be naive to think that low-income individuals disproportionately play lotteries due to ignorance or cognitive errors. It is more likely that low-income individuals are disproportionately motivated to purchase lottery tickets due to some factor that relates to their economic status. Study 1 indicates that lotteries are more alluring for poor people because they provide an opportunity to correct for low-income status. Study 2 indicates that part of their appeal is that they are one of the few opportunities available to the poor for a sudden increase in wealth.

The results of this paper point to a cruel irony. People with low incomes play the lottery, which amounts to effectively burning $.47 on every dollar spent, in part because the cognitions associated with poverty increase the appeal of playing. This creates a vicious cycle. The subjective feeling of poverty leads people to take actions that effectively exacerbate the financial condition which led to the actions in the first place. The cost is not insubstantial. Approximately 50% of households with an income less than $25 000 play the lottery, and among the households that play, the annual per capita expenditure on lotteries is above $550 (Clotfelter et al., 1999).

Do these findings indicate that lottery ticket purchases are evidence of irrationality? Though our findings show that preferences for lottery tickets are not fixed or stable, but are influenced by the decision context, we do not believe that the purchase of tickets is *necessarily* irrational (aside from compulsive gamblers for whom playing the lottery is clearly an irrational, addictive behavior).[4] People spend money on a lot of recreational activities, such as movies, amusement parks, books, travel, and casinos that provide intangible benefits, and it would be difficult to argue that ''buying a dream'' in the form of a lottery ticket is less rational than any of these purchases. It is also possible that small, periodic lottery winnings make it possible for people who otherwise (perhaps due to self-control problems or ''impossible to decline'' requests of family or friends) could not save money, to periodically win a sufficient sum to enable the purchase of consumer durables. It must be acknowledged, however, that there are less expensive ways to commit to save, such as bank accounts with restrictions on withdrawals akin to Christmas clubs (see Ashraf, Karlan, & Yin, 2006).

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[4]Compulsive lottery playing is not an insignificant problem. Twenty per cent of callers to the 1-800-GAMBLER national hotline had trouble-controlling spending on state lottery tickets, second only to casino gambling, according to the Council on Compulsive Gambling of New Jersey, 2002 Help Line Statistics.

Table 5. Marginal probability effects of the social equalizer induction in Experiment 2

	(1) Relative income induction	(2) Relative income induction with chronic	(3) Relative income induction with all control variables
0 Ticket	-0.25^{**} (0.10)	-0.24^{**} (0.10)	-0.24^{*} (0.10)
1 Ticket	$0.05^{\dagger}$ (0.03)	$0.05^{\dagger}$ (0.03)	$0.06^{\dagger}$ (0.03)
2 Tickets	0.07^{*} (0.03)	$0.06^{\dagger}$ (0.03)	$0.07^{\dagger}$ (0.04)
3 Tickets	0.30 (0.02)	0.03 (0.02)	0.03 (0.02)
4 Tickets	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
5 Tickets	0.09^{*} (0.04)	0.08^{*} (0.04)	0.08^{*} (0.04)

Standard errors in parentheses.
$^{\dagger}p \leq .10$; $^{*}p \leq .05$; $^{**}p \leq .01$.

Regardless of whether playing the lottery meets the qualifications of economic rationality, it is unfortunate that the cost of ''buying a dream'' has to be so high. Why should wealthy people purchase dreams that provide an average real return of 7% per annum while poor people purchase dreams that provide an instantaneous return of -47% or worse? Some economists have argued that, although playing the lottery is voluntary, it should be viewed as a regressive tax. This tax is substantial. In 2006, lottery ticket sales generated $17 billion in net revenue (Stodghill & Nixon, 2007). In our opinion, states should not be in the business of extracting wealth from poor people, especially when, as we show, the psychological experience of poverty is in part responsible for the attractiveness of lotteries. State lotteries should not be banned, as that would surely drive the activity underground. Instead, we propose a simple solution that would avoid leveling a high tax on low-income families: provide an actuarially fair rate of return less any cost of administration, and reduce the variation in prize returns by increasing the number of winners and reducing the jackpot amounts.

Additionally, the marketing, advertising, and the use of game variability and promotions should be curbed.[5] Though the mandate of many state lotteries is explicit in its goal of maximizing revenue, using lotteries to generate discretionary revenue for the state through a *seemingly* ''painless'' tax only encourages exploitation of the poor's naturally tendency to be drawn to the lottery. As argued by Clotfelter and Cook (2007), a profit maximization strategy is inappropriate and states should adapt a model similar to that of state-run liquor monopolies, where the goal is to regulate and control the sale of alcohol in order to accommodate ''unstimulated'' demand, but not to promote it. Given the important source of revenue that lotteries have become for states, however, one shouldn't hold one's breath waiting for such changes to occur.

Is there a middle ground? Our findings point to a policy recommendation that allows for a compromise between doing away with the profit maximization strategy of state lotteries and completely ignoring the financial well being of low-income lottery patrons. In short, we find that the feelings and cognitions associated with poverty increase the attractiveness of lotteries. So why not capitalize on this tendency instead of lamenting it? Our results suggest that lotteries are powerful *motivators* for low-income populations. Perhaps they can be used to encourage financially beneficial behaviors, such as saving. There is a wealth of evidence that lottery-linked savings accounts can be applied quite successfully in low-income populations. In developing countries, microfinance institutions have utilized such accounts where, for example, customers accumulate lottery tickets by making regular minimum deposits (Ashraf et al., 2003). Many commercial banks outside of the US also use lottery-linked savings accounts. In a typical arrangement, monthly drawings are held for cash and prizes and customers get one lottery ticket for every $X they have on deposit at the time

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[5]The most recent development is the introduction of lottery video game terminals, which are part of an effort to attract younger customers (Stodghill & Nixon, 2007).

of the drawing (Guillen & Tschoegl, 2002). These accounts typically draw customers from the lower end of the income distributions. These programs benefit banks by increasing deposit balances and benefit customers by increasing their financial security, although often these accounts have slightly reduced interest rates to help cover the costs of the prizes. Policy makers should explore the establishment of similar financial services in the US, either through partnerships with banks or directly through state lotteries, such as by offering lottery tickets with a savings component. Of course, careful pilot research must be done to evaluate the social benefit and avoid unintended consequences of such programs before implementing them on a wide scale.

APPENDIX 1

Survey used in the experimental condition of Experiment 2. The response frequencies are filled in on this survey

Check which group is most likely to:	Poor people (%)	Middle class people (%)	Rich people (%)	Equal chance for all (%)
Get a scholarship	10	40	19	31
Win playing a slot machine	3	31	14	52
Be elected mayor	2.5	12	78	7.5
Find $100 on the ground	14.5	22	10	53.5
Become a superstar singer	5	24	20	51
Be a victim of identity theft	16.5	24	16.5	43
Get a promotion	0	30	30	40
Get discounted housing	63	10	5	22

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