

## Psychology and Economics: What it Means for Microfinance

Sendhil Mullainathan & Sudha Krishnan

April 2008

---

*Contributions to this research made by a member of The Financial Access Initiative and Innovations for Poverty Action.*

The Financial Access Initiative is a consortium of researchers at New York University, Harvard, Yale and Innovations for Poverty Action.

NYU Wagner Graduate School  
295 Lafayette Street, 2nd Floor  
New York, NY 10012-9604

T: 212.998.7523  
F: 212.995.4162  
E: [contact@financialaccess.org](mailto:contact@financialaccess.org)

[www.financialaccess.org](http://www.financialaccess.org)

Innovations for Poverty Action applies rigorous research techniques to develop and test solutions to real-world problems faced by the poor in developing countries.

Innovations for Poverty Action  
85 Willow St, Building B, 2nd Floor  
New Haven, CT 06511

T: 203.772.2216  
F: 203.772.2428  
E: [contact@poverty-action.org](mailto:contact@poverty-action.org)

[www.poverty-action.org](http://www.poverty-action.org)

Why do the poor borrow from moneylenders at high rates of interest? How do the poor manage the little income they earn? Are there patterns present in their financial choices? Questions such as these are typically understood through the lens of economics. Recent research highlights a shortcoming of this lens. Everyday economic decisions often have richer psychological underpinnings than the standard economic model allows. People are restrained in their capacity to think through problems—not every decision is methodically contemplated, calculated, and executed. This note introduces readers to the sub-field of behavioral economics, which combines elements of psychology and economics, and shows how it can help understand basic phenomena in microfinance.

In one study, Benartzi and Thaler illustrate the impact of psychology on important personal choices (Benartzi and Thaler, 2001). Surveying a population of individuals planning for their own retirement, the researchers presented information about the distribution of payouts from self-selected portfolios and from the median portfolio selected by their peers. The majority of individuals that participated in the survey preferred the median portfolio over the one they picked out for themselves. However, even those who preferred to choose their own portfolios still preferred the distribution of returns expected from the median portfolio to the one they chose. Benartzi and Thaler conclude that people simply did not develop portfolios in line with their attitudes towards risk, resulting in inefficient portfolios. Several points are worth noting about this study. First, this data illustrates that people are making mistakes because they are not choosing according to *their own preferences*. This is a general point: behavioral economics is not about external imposition of preferences. Instead, it studies how people may fail to maximize their *own stated or revealed preferences*. This discipline is crucial because without it, simply arguing that others make mistakes is too easy. Second, such mistakes occur even when decisions are extremely important and people are motivated to choose wisely. In this case, individuals are choosing the course of their own retirement and yet appear to have chosen poorly. Finally, the behaviors we study are “universal”, and are not specific to the poor or some other population. This study, and many like it, was performed on a sample of the well-off and well-educated. All the phenomena we illustrate fall into this category. We argue below that the general psychology that affects all income categories is already powerful enough to shed light onto the behavior of the poor, without invoking a specific psychology of the poor.

In fact, one of the insights from this research is that psychological fallibilities that affect all groups may have particularly large effects on the poor because of their already precarious financial state. Any mistake in estimating the ability to pay upcoming expenses, such as loan repayments, could result in being late or defaulting on a loan, thereby jeopardizing a person’s ability to borrow affordably. If even one unforeseen event occurs, such as an income-earning member of the household suddenly becoming injured, a child may not be able to continue his education or a mother may not be able to buy enough food for her family. Mistakes matter more for the poor, given that insufficient planning can spiral further and faster, leading to even worse outcomes like compromising education or nutrition (Bertrand, Mullainathan and Shafir, 2004). In short, being poor is not simply about having too little income; it is a state of having insecure income. When an individual has to think about how her income could suddenly vary day to day, month to month, or season to season, it is easy to see how she would have much less room for error when thinking about her financial needs or possible shocks in the future (Mullainathan and Karlan, 2006).

This paper lays out four psychological findings that provide insight on the financial behavior of the poor that are particularly relevant for microfinance practitioners. Behavioral perspectives on the individuals to which MFIs are committed could significantly aid product development and enhance outreach. A sketch of each fact, supported by psychological evidence and illustrated using examples of microfinance clients, is presented below.

### **Fact I: Planning is Difficult**

The psychology of planning, or the lack thereof, is an important topic in microfinance for both theoretical and applied reasons. The tendency of individuals to underestimate their future needs, in terms of financial resources or time, for example, stems from a variety of forces. They can put off work until later and regret it when they suddenly require extra income. They can have strong feelings about events or people that divert their attention to both rational and irrational acts, such as lending to relatives. They may be preoccupied with their current circumstances and forget about upcoming expenses, such as school fees. And they may suddenly find themselves having to deal with unforeseen obstacles, such as a drought. In short, a planning fallacy exists in which individuals have both self-control and time-inconsistency dilemmas that they must constantly face with little margin for error among the poor (Mullainathan, 2004).

### ***Time-varying inflexible contracts***

It is worth noting that MFI lenders require loans to be repaid in small installments, generally beginning one to two weeks right after the initial disbursement is made. The repayment amount is generally calculated by taking the amounts of principal and interest due and dividing by the number of weeks or months in the duration of the loan term. Frequent repayment installments by bank officers is one of the distinctive features of microfinance, and is believed to act as an “early warning” system for default risk. At the same time, while the fixed repayment structure may reduce the risk of default, it leads to higher transaction costs for the MFI, which are passed on to borrowers through higher effective interest rates and further limit the repayment capacity of the poor (Armendáriz and Morduch, 2005). In the original Grameen Bank model, installments were set as weekly, and an important advance in Grameen Bank II was that loans could be repaid, though still weekly, in different amounts in different seasons. For example, poor households, especially those engaged in seasonal enterprises like dairy farming, may find it difficult to make fixed repayments week after week for the duration of their loan. This idea relates back to the notion that restricting repayment options may also restrict the poor’s repayment capacity. The puzzle presented here is centered on why repayment schedules and loan contracts are structured in this way.

Psychology helps explain this basic contract design problem. Consider a typical MFI in India that lends to a farmer so that she may purchase a cow or buffalo. The MFI will offer a weekly or monthly loan to its client that she must repay in equal installments, even though she does not maintain a fixed income stream. There is a fundamental assumption within the structure of the loan that suggests when her income is high she will put money aside to repay the loan. While the assumption is in line with rational models, we have already established that these models are not necessarily the best evaluations of human behavior. Instead, the client may not in fact save income in good times to offset loan repayments during the bad times. How does an MFI think about debt after realizing that the client may not be good at planning for her future in the face of seasonal fluctuations, business cycles, health shocks, etc? When thinking about what happens if an animal is less productive than expected, it is easy to imagine how a farmer may find herself struggling to make ends meet. She may eventually end up resorting to an informal creditor, who is likely to charge exorbitant rates of interest given her desperation. To better serve the poor,

practitioners of microfinance could consider restructuring these cattle loans in such a way that a client's concave income stream is taken into consideration.

In an experiment conducted by Field and Pande (2007), the researchers note that weekly repayment schedules are a standard feature among nearly all non-self-help group (SHG) microfinance lending in India. MFIs have been reluctant to decrease the frequency of repayments and group meetings out of fear that doing so will disrupt fiscal discipline in borrowers, and, consequently, the ability to repay. In collaboration with an Indian MFI based in West Bengal, Field and Pande devised an intervention and randomly assigned varying repayment schedules: 1) traditional weekly meetings and weekly repayment schedules, 2) weekly meetings and monthly repayments, and 3) monthly meetings and monthly repayment schedules. It soon became clear that introducing greater flexibility for clients had no discernable effects on defaults or repayment delinquency, given that the researchers observe very few cases of default in the data. Their results are discussed in depth in Field and Pande, 2007. They conclude that the lender's fears were misplaced since first-time borrowers repaid their loans just as well even with lower repayment frequency schedules.

If an MFI were able to take a few samples of farmers in groups of 50, for example, and utilize different contracts in each sample, at the end of the year the institution could examine the economic performance of its clients. Through this method, it would be possible to gain insight into which repayment schedules worked best for farmers during their lean seasons, and on the effects of various contract structures on the income of each sample. Additionally, understanding the micro-psychological processes involved is a vital part of developing new microfinance products and services.

### ***Borrowing when saving could work***

The fact that planning is a task that so many individuals struggle with helps explain why the poor repeatedly turn to moneylenders rather than save money early, particularly when considering anticipated expenses. In spite of the high cost of borrowing from moneylenders, the poor in developing countries continue to borrow for expenses such as school fees and pregnancy, when using saved funds would be much more cost-effective.

A basic economic model indicates that people manage their incomes by taking into account how much their income will be worth to them in the future, after considering any potential shocks that may occur (Mullainathan, 2004). Given this thought process, people then have contingent ideas of how much of their income to spend, in good times and bad. And, assuming people are unbounded in their ability to do so, they implement this plan by saving.

However, as discussed, people face an array of distractions that often disrupt their set goals, and the difficulty of optimally managing their income amidst these pressures has implications for how people save. Consider an Indian village where a poor woman named Anuradha lives with her son Govinda who is currently in the fifth standard. While Anuradha knows that every year during the same month, year after year, her son's school fees are due, she repeatedly borrows from the village moneylender. Given that Govinda's mother realizes the importance of her son's education for getting a good job or marriage prospects, it is striking that she is unable to start saving months in advance, even a few rupees a day, for this foreseeable expense of roughly ten to fifteen rupees per child for monthly fees at a government-run school.

While there are savings dilemmas for people in rich and poor countries alike, the standard economic view ignores the high stress circumstances in which the poor live. Putting aside money

for schooling involves making sacrifices months in advance, during which any number of shocks could take place, and as noted earlier, shocks tend to matter more for the poor. Anuradha's husband may become injured while working as a casual laborer, her mother whom she supports may fall seriously ill, the small petty shop that she owns may suffer flood damage, etc. The fact is that any one of these events would jeopardize Govinda's educational attainment, given that his mother's ability to plan for his school fees, even if due at the same time every year, is constrained by her vulnerability to immediate pressures. In short, Anuradha repeatedly turns to the moneylender because it is easier than saving at the cost of being unable to meet short-term needs.

The implications of this savings dilemma point to the importance for microfinance practitioners to keep developing products that assist the poor to better manage their incomes by saving as much as possible. As noted by Ashraf, Karlan, and Yin (2005) with clients of a rural bank in the Philippines, the use of deposit collectors, for example, works since it both reduces the transaction costs associated with saving at a bank or with an informal creditor as well as reminds individuals on a daily basis of the need to save and the pressure to save. As the authors note, "there is almost a moral imperative to deposit with a deposit collector, since he or she is there to collect the money on the individual's behalf." This is the exact mechanism of commitment, even if nonbinding as is the case with the collectors, that causes individuals to end up making deposits on a daily basis and saving for the future. The acquired habit of depositing regularly helps individuals to save more than they would at home.

### ***Over-borrowing***

The planning fallacy revealed by psychologists illustrates that planning is difficult, given that formulating a plan of action for an unforeseen event seems abstract when applied to one's own life. For microfinance clients, this problem of not taking into account expenses, even if anticipated, for the future often results in multiple borrowings from multiple sources.

Another example illustrates this concept in a real economic context. Regina owns a small petty shop in the city. For her business to run smoothly, she must consider her various financing needs, from working capital to long run investments. While Regina is already a client of a local MFI where she has taken out a loan for income generating purposes, she decides to use only a portion of the loan for buying stock and keeps the remaining money for her daughter's college fees. However, as the beginning of the school year nears, Regina's elderly mother-in-law suddenly falls ill and needs an operation. As the money Regina had planned to use for her daughter's college fees is depleted by the more immediate health expense, Regina ends up borrowing from a moneylender at a much higher rate of interest—even though she could have borrowed more from the MFI—since she knows she has the option of negotiating or delaying payments (even at the cost of higher interest rates) with the moneylender during these hard times. To date, Regina has borrowed from the MFI and the moneylender for different reasons under different circumstances, and as she needs to continue financing her livelihood, she again borrows from other sources, including another MFI and SHG.

This fictional scenario depicts how the poor can easily and quickly become ensnared in debt, even though they share the same flaws and biases as those who are better-off. Even one event that was not considered earlier suddenly increases their need for credit—from wherever they can get it. Borrowing beyond one's repayment capacity not only jeopardizes an MFI's operations and portfolio but also overburdens a client, who may then feel driven to extreme measures to make repayments to all those to whom she is indebted.

Over-borrowing is partly driven by the lack of credit bureaus in countries where microfinance has received recent impetus, such as India, with the larger information gaps in rural areas creating fears of adverse selection and moral hazard. Private lenders and MFIs that currently offer loans to rural households use traditional screening mechanisms to make disbursement decisions—for example, land size, assets owned, and income from crop yields. The issue is whether these mechanisms are the most effective way to screen borrowers in rural areas, particularly given the different nature of livelihoods and borrowing needs. In situations such as these, a credit bureau can address the challenges practitioners face in tracking their clients' borrowing records and the extent of borrowing across entities. The prediction of an organization such as a credit bureau is that lenders will be able to avoid excessive lending and borrowers will not engage in over-borrowing. As in the past, progress in the microfinance sector has been helped by the sharing of information about what works, seen with the widespread adoption of the Grameen model, for example, and greater sources of information on households' borrowing behavior. Combined, these factors make sense and show promise for the scalability of the sector.

## **Fact II: Sticking to a Plan is Difficult**

It should be clear by now that many facets of human nature tend to be ignored by standard economic models. Economists believe that individuals, regardless of when they are asked, will have the same preferences about trade-offs related to their well-being between two separate moments (O'Donoghue and Rabin, 2000). However, in the short run, people repeatedly behave in one way, often in pursuit of immediate gratification and in contrast to choices made in the long run. This idea of inconsistency across time is evident in that a woman has one set of preferences today for the future (e.g., she prefers to save money in the future), but in the future her preferences change (she wants—or needs—to spend now). In short, there is a disconnect between what people plan to do in the future and what they actually do when the future arrives.

### ***Debt discipline has dual benefits***

This conflict is one that many microfinance clients struggle with, especially when thinking about how self-control problems are related to fixed debt contracts. As with the case of Regina, who borrowed from a costly moneylender and essentially paid for the flexibility of her repayments, there is often a disparity between a client's income and her debt payments. When considering the distortions in such situations for most clients, the benefits of using fixed repayment contracts can be analyzed from the underlying propensity for time inconsistency.

Offering repayment flexibility may weaken the debt discipline of borrowers. Nearly all MFIs conduct training sessions to teach clients about sound financial behavior with respect to developing good financial habits, including making payments on time to establish a good record with the organization and become eligible for higher loan amounts. By varying debt contracts, many organizations worry that clients' repayment discipline in which they have invested may be undermined. Rather than keeping money aside for repayments every week, borrowers may forget which weeks to pay and which not, or find it difficult to keep up the habit of saving to pay the loan. In terms of self-control, it would be even more tempting for a client to use savings—either intended for loan repayments or for other uses—in the present, effectively wasting hard-earned income on spontaneous expenses, gifts, events, etc. In the end, the worry here is that permitting weeks off in the debt repayment schedule will encourage people to yield to present circumstances and cause lower repayment when payments are due.

Similarly, another implication of time inconsistency relates to the “unspoken” reason to borrow rather than save. Often times, as part of the training required for becoming eligible for most MFI

products and services, loan officers tell clients that even if they don't think they can afford to save, they can start small and, over time, their spending habits will adjust so they can increase the amounts they save. As described above, however, given that people have different preferences at different horizons, many clients may attempt to save regularly for the future but find themselves having to spend in the present. The critical distinction between the debt and savings programs of MFIs is that debt has a commitment value that savings does not. From a client's perspective, debt is money that must be paid back to the lender, week after week or month after month, whereas saving, precisely because it is optional, provides no such commitment. In order to self-commit to saving, many individuals, including microfinance clients that are able to pay off their debt regularly, join ROSCAs and chit funds to agree among themselves on the size and frequency of their pay-ins. The commitment and support comes from other members that are depending on their turn to receive the pay-out. While there is a greater degree of inflexibility in that each member of such a club must save the same amount in the same period, this is the mechanism that helps people stick with a plan of putting aside money for future needs.

Revisiting the commitment savings work of Ashraf, Karlan, and Yin in the Philippines, the researchers note that clients may want either a commitment savings product or a deposit collection service because they know they are poorly managing their time, putting things off, forgetting time-sensitive matters, or are over-estimating their free time. Such products and services are designed to ensure that individuals follow through with their stated intentions and overcome what psychologists deem "the planning fallacy" (Ashraf, Karlan, and Yin, 2005). These types of patterns in the microfinance clients' financial choices can provide additional insight on the long-term credit and savings products MFIs are developing for existing and new clients, which both reduce costs, time, and thought required for savings transactions.

### ***Borrowing and saving***

In fact, it is not uncommon to see some microfinance clients engage in simultaneous borrowing and saving. That is, MFIs are aware that certain clients are borrowing from the institution in order to deposit funds into a certificate of deposit (CD) at a local post office, for example. Another form of simultaneous borrowing and saving, through investing, is evident as clients borrow and buy gold, which is often a source of security for women and can also be pledged against future loans. For these reasons, and in light of the difficulty of sticking with a course of action while facing a variety of temptations, simultaneous borrowing and saving by immediately investing loans is a debt commitment device that helps individuals deal with temptations and meet their consumption goals.

### ***Paying for "inflexible" flexibility***

The theories behind self-control (or lack thereof) illustrate how this problem can cause great difficulty for a microfinance client to continue regular repayments with an irregular debt schedule. The fact that people's preferences change, either voluntarily or not, gives rise to the question of how to provide incentives to prevent it. In fact, clients may even be willing to pay for a type of "inflexible" flexibility—that is, a contract with preset skips. For example, the monsoon is a tough time for everyone, and MFIs could design debt contracts that reflect the difficulty by lowering payments during this period in a predetermined manner (Mullainathan and Karlan, 2006).

In a specific case, the KAS Foundation (KAS), an MFI based in Orissa, India, has a monthly repayment system for its SHG clients. Most of KAS's rural clients are dairy farmers and face a lean season of two months without milk. For these clients, a debt contract could pre-specify a smaller loan during this period, in correspondence with the farmers' flow of income. This predetermined flexibility benefits both the borrower and lender. The client does not feel that,

when the future arrives, she could negotiate the repayment, and the MFI's recovery performance is also not hindered. As a result, these strictly preset rules for flexible contracts implemented in the current microfinance structure could help mitigate the interrelated problems of time inconsistency and self-control.

### *Over-borrowing revisited*

The notion of over-borrowing can be misleading since having access to credit can be quite positive, not perilous. Debt helps solve the very commitment problem often manifested when people attempt to save. Even when the problem of self-control exists, an individual, whether a poor farmer in an Indian village or a shop owner in a Chilean city, can gain access to larger sums of money through loans from MFIs that would be much more useful in enhancing their quality of life by paying off old debts to moneylenders or helping out in the case of medical emergencies, for example. Thus, rather than keeping small amounts of money that may be easily spent on frivolous goods or borrowed by relatives, neighbors, friends, etc., credit allows the poor access to the same goods and services that are needed by all, and also allows them to leverage their assets. Coming full circle, savings amounts to the accumulation of assets and access to risk-free financing, while credit entails the much riskier leveraging of assets, including human capital.

In terms of future expenses and future shocks, as discussed earlier with the fictional example of Regina, it can be very difficult for the poor to take the future into account when living in an uncertain present. With Regina, the need for additional loans stemmed from a serious event—her mother-in-law falling ill—but too often MFIs come across borrowers taking out loans in temptation. When the poor give into temptation, relative to the rich, the consequences of doing so tend to be much graver, as mentioned. There is a human need for immediate gratification that is overlooked by many institutions. When an overextended borrower begins to make late payments on loans or even defaults, the true usage of loans must be examined. MFIs seem to take this fact into consideration by breaking down credit products to meet either business or personal requirements. Many microfinance clients are self-employed or informal sector workers, and earn their income by selling fruits, vegetables, or flowers, or by running small shops. Therefore, the initial loan offered by an MFI is often a working capital loan used to acquire things like push carts or sewing machines. For those salaried clients that require credit for household expenses that their salaries do not cover, such as home repairs, school fees, festivals, medical expenses, and repaying debt to moneylenders, there are often separate loan products to distinguish between business and family usage.

Unlike a credit card, which makes debt available to the cardholder “on demand”—that is, with a revolving line of credit that can be used to make purchases anytime, anywhere and can easily lure a person into spending for immediate gratification—a loan that is offered at fixed intervals could help as a solution to over-borrowing. An MFI could develop a credit product where amounts of the loan become available during certain periods. These fixed loan cycles would allow the borrower to have a known date when he or she could borrow. They would provide a mechanism to help individuals remember to plan around that date and decide which expenses could be paid off with the funds as they become available.

Another possible solution to this psychological mechanism of giving into immediate gratification is to allow individuals to self-commit to their own debt limits. For instance, Wertenbroch (1998) discusses how people tend to over-consume tempting goods, such as chocolate, if they buy such items in large quantities. The preference for immediate gratification means that if a woman buys a big bar of chocolate, she will most likely eat the whole bar when she gets home. Instead, to avoid over-consuming, she may choose to buy a small piece of chocolate each day as a means of



self-control. Trope and Fischbach (2000) describe how people strategically use penalties to prevent unwanted actions, such as voluntarily paying penalties for foregoing unpleasant medical procedures. As the date of the procedure nears, people want to skip the procedure, which means they pay penalties in order to self-commit themselves to having the procedure (Mullainathan, 2004).

As mentioned before, saving is much easier said than done. Too often, people are derailed from their goals when they keep money aside in their homes, which can then end up as part of a “leaky bucket.” That is, small sums of money that are often accessible to the household as a whole can easily be spent on frivolous goods or borrowed by relatives, neighbors, friends, etc. Thus, the outflow of the bucket of savings can “leak” too quickly and easily for a woman to purchase what she needs. Allowing a self-control device for borrowing in microfinance client group meetings, for example, can help clients borrow optimally, and within their repayment capacity. Ashraf, Karlan, and Yin note in their research in the Philippines that bank clients could purchase a locked box for their home, similar to a piggy bank, for a small fee. The box—to which only the bank held the key—affected saving practices by encouraging small and frequent deposits at home and helping clients achieve their savings goals (Ashraf, Karlan, and Yin, 2005). As with credit available “on demand,” the distinction can be made here with transforming small pots of cash so that, ultimately, a larger pool of money will be available one day as savings “on demand” for the purchase of various consumer durables, for example.

### **Fact III: Probability is difficult**

The poor are forced to make choices in volatile environments, sometimes not realizing the inherently risky nature of decisions they make in their everyday lives. For example, when choosing an income-generating activity, entrepreneurs may specialize in one occupation, even though they may be better off engaging in multiple activities to hedge against a shock in any one field. Those who work in agriculture may benefit from also working as a part-time laborer in order to reduce their vulnerability to farming risks. On the whole, the poor are perceived as underestimating risk in decision-making under uncertainty although their flaws in logic are also common to the rich. For the poor, however, such perceptions, or misperceptions, tend to have more severe and immediate implications.

Behavioral research has uncovered many human biases in judgment. In addition to explicitly revealing the planning fallacy and time inconsistency, it has shown that people tend to believe in “the law of small numbers.” Individuals can often exaggerate how likely it is that a small sample can be representative of the larger population from which it is drawn (Tversky and Kahneman, 1971). This tendency to consider a sample as representative is noticeable in an array of scenarios, from simple coin tosses to complex financial decisions.

Tversky and Kahneman provide many examples. For instance, they asked a group of subjects to generate a list of random sequences from a hypothetical coin toss (with a fair coin). The respondents greatly exaggerated the proportion of heads in any small amount of tosses as much closer to .50 than principles of probability would predict. If the sequence included five tosses, the participants chose 3 heads-2 tails or 2 heads-3 tails more often than not. That is, people act as if every part of the sequence is reflective of the proportion; if a part of the series appears out of line, from the participant’s perspective, with proportion, such as 4-heads-1 tails, then the individual tends to expect a corrective bias in the opposite direction, with 0-heads-5 tails, for example (Tversky and Kahneman, 1971). This idea of the ‘gambler’s fallacy’ indicates that the source of the misconception is that people fundamentally expect that the proportion of a larger population will be reflected even in a small sample, thereby discounting laws of probability.

This fallacy is not exclusively held by gamblers. A self-employed microfinance client, such as a petty shop owner, may experience two negative shocks in a row that affect her business, such as flooding followed by a robbery. Though a situation exists where the next unexpected event that affects her business may again be negative, such as a cyclone, the shop owner continues to maintain high expectations and hopes for the positive. The logical flaw is that people often perceive a regression towards the mean – that is, individuals may make predictions that expect either negative or positive events as one-time occurrences, after which the variance will diminish as things average out. In this case, the shop owner believes that the probability of another negative event occurring is less likely than it really is, and that things are looking ‘up,’ given that ‘down’ has already occurred in the form of negative events.

On the other hand, people may incorrectly assume that the same outcome will continue, which is often referred to as the “hot hand” fallacy (Gilovich, Vallone, and Tversky, 1985). In the game of basketball, for example, people believe that a player who has recently scored several times in a row is more likely to score again, because he or she is “hot.” Similarly, a dairy farmer may experience high yield this season and again high yield in the next; again, there is a 50-50 chance that the next animal may be good or bad cattle, though the farmer continues to have high hopes for high yield for the third time. This logical flaw of perceiving a “streak” is why products, such as insurance, would be better off mandated. Tversky and Kahneman’s fallacy about individuals’ mean reverting expectations and misconceptions about statistical properties implies that it is

unlikely people will take shocks into consideration early on and even develop “buffers,” given their outlook that events of the past will continue as the status quo.

#### **Fact IV: Pricing is difficult**

##### ***People may not pick the best investment projects***

Are individuals sophisticated or naïve? MFIs assume sophistication but rarely take into account the human information processing system, which is much more complex than this simple question. In the social context of a system, it is worthwhile to consider how microfinance practitioners could be better served by providing advice to clients, even guidance regarding behaviors that may already be anticipated among the risk-averse. For instance, many microfinance clients work in animal husbandry and keep cattle. Yet individuals involved in this work rarely vaccinate their animals, even though these vaccines are known to help prevent and control livestock diseases that can cause huge losses to these clients. Given these economic costs, an MFI that offers credit for animal husbandry may better serve its clients as well as their portfolios by offering educational programs to create awareness among farmers. In fact, vaccination fees could even be deducted upfront from the loan so that each farmer’s payment could support the total cost of vaccinating the animals. In regions where there are a particularly high number of cattle, preventative measures like vaccines are all the more necessary to help farmers reap the maximum benefit of their animals—and credit.

To shed light on this idea of the impact of access to training for microfinance clients, Karlan and Valdivia (2006) performed an experiment measuring the marginal impact of adding business training to a Peruvian group lending for female micro-entrepreneurs. During their normal weekly or monthly meetings with the partner bank, entrepreneurs in the “treatment” group received 30 to 60 minute training sessions related to maximizing profits with limited capital and labor availability. At the same time, control groups continued as they were before the research and attended meetings at the same frequency but only for the purpose of making loan payments or savings deposits. The researchers find that entrepreneurs in the treatment groups benefited from improved knowledge, practices, and revenues in their businesses, which suggests that other banks and lenders could benefit from similar market-based interventions and recover their costs in doing so.

##### ***Added value of bundling insurance rather than selling it***

As mentioned, individuals left to themselves may not purchase insurance for their cattle, given that both planning and probability are difficult. Though cattle are delicate animals susceptible to an array of diseases or accidents that could cause huge losses to the micro-credit borrower and lender, cattle insurance is a product that remains without a huge demand. From the MFI’s perspective, partnering with an insurance company to offer such a tailored product is seen as investment in promoting clients’ cattle production and as the means to maintain access to loans while protecting the credit portfolio. Though the animal owners would be protected from a variety of conditions, including natural hazards, and compensated accordingly by the insurance company (often through a tie-up with the local MFI), clients often perceive the compensation procedures as intimidating and the premiums as high.

Yet both the MFI and its clients may be better off by a mandate for such a product. Farmers who finance their cows by a loan from the institution could be obligated to participate in the cattle insurance scheme. The insurance contract could start with the first year that the client buys a cow and then become extended on a mutually agreeable basis thereafter.

Once again, when planning for the future, it would be useful for microfinance practitioners to think about how to help offer solutions to individual clients, particularly those that face similar problems in a given sector, such as dairy farmers, by increasing the quality of their choices. As with vaccinating cattle or bundling cattle insurance, an MFI can encourage certain behaviors among clients at the appropriate time, particularly given the difference in individuals' choices at different horizons. The option of putting off vaccinations or purchasing insurance can seem appealing, as appealing as before when a client avoided making the same decision. In other words, an MFI can help clients to spend more time thinking through set protocol when it comes to decisions that affect their everyday lives and livelihoods.

The benefits to the client, particularly in terms of these kinds of basic decisions, suggest that both parties involved in the decision-making process, the client and the microfinance practitioner, could be better off if the MFI were to offer this kind of "advice," without even having to take ownership of such counsel. For instance, if the MFI were to bundle cattle insurance with other products offered by a third party insurance company, the loan officers could educate clients about the benefits of such a product without having to directly supply the good to the client. If a microfinance client that is a dairy farmer experiences a loss of cattle, files a claim with the insurance company, and has her claim paid, then the success of that process can be attributed to the advice offered by the MFI. At the same time, if the farmer does not heed the advice of the MFI in filing a claim correctly, or at all, then the client cannot come to the loan officer and make a complaint. By helping clients go one step further in assessing these decisions, but without allowing clients to hold the institution responsible for their choices, MFIs can indirectly help set an appropriate course of action for clients that would make everyone better off.

### **Concluding Observations**

The psychological evidence presented suggests that planning for the future and sticking to that plan is difficult. The behavioral economic framework of these facts supports the idea that debt discipline is a good mechanism for microfinance clients. Given the liquidity constraints that many of the poor face, many are unable to save enough on a regular basis to meet their needs. For this reason, having relatively affordable access to credit can allow many clients and their families access to a range of items that will enhance their quality of life, from new consumer goods to the ability to pay for children's school and college fees. The commitment to make weekly repayments to the MFI is something that many clients see as fixed, which helps them psychologically realize that saving for such payments cannot be delayed. In any case, given that mistakes are easier to make for the poor and carry much more weight, repayment discipline, implemented either through product design or group trainings, helps mitigate these self-control problems when it comes to debt.

At the same time, a behavioral perspective can be useful when thinking about common accusations leveled at the microfinance sector, including the fact that clients borrow at high interest rates and may not be fully aware of the conditions to which they agree when borrowing from MFIs. With the example of the "leaky bucket," where clients often find themselves unable to save up a large enough sum of money to purchase consumer durables for their homes, given the array of temptations and events responsible for the savings leakage, it is easy to see how microfinance clients are borrowing at relatively high interest rates because of behavioral reasons, rather than simply the lack of credit. In fact, this common behavior could be more of an illustration of the failure of savings markets, given that the cost of savings, at the expense of immediate need, may be so high that clients continually turn to both MFIs and moneylenders to meet their need for credit.

Lastly, in terms of consumer finance and policies to regulate the microfinance sector, it is important to realize that development economists tend to emphasize the presence of institutions: for instance, banking may need to be privatized to guarantee a more streamlined credit system that also ensures better savings facilities and smoother consumption. Behavioral economists take these ideas and examine them through a psychological lens, which often shifts the focus to how important the effects of human behavior are when thinking about how the poor deal with all aspects of their lives, from managing their finances to providing for their families. We see through the behavioral lens that institutional design in microfinance is not just about providing access to financial services but about solving these issues that microfinance clients—the poor—face on daily basis. Within the scope of this piece and the few examples presented here, it is the hope of the authors that principles of psychology as well as economics will provide greater intuition when formulating development policies that affect the poor in their everyday lives.

## REFERENCES

- Armendáriz, B. and Morduch, J. The Economics of Microfinance. Cambridge: MIT Press, 2005.
- Ashraf, N., Karlan, D., and Yin, W. "Deposit Collectors." Yale University Economic Growth Center Discussion Paper No. 930, 2005. Available at Financial Access Initiative: [http://library.financialaccess.org/pdf/I11\\_FAI\\_DepositCollectors.pdf](http://library.financialaccess.org/pdf/I11_FAI_DepositCollectors.pdf)
- Ashraf, N., Karlan, D., and Yin, W. "Tying Odysseus to the Mast: Evidence from a commitment savings product in the Philippines." Yale University Economic Growth Center Discussion Paper No. 917, 2005. Available at Financial Access Initiative: [http://library.financialaccess.org/pdf/I12\\_TyingOdysseys.pdf](http://library.financialaccess.org/pdf/I12_TyingOdysseys.pdf)
- Banerjee, A., Mullainathan, S. and Shafir, E. "Poor in more than one way." Forthcoming.
- Benartzi, S. and Thaler, R. "How much is investor autonomy worth?" The Journal of Finance, 2002, 57(4): pp. 1593-1616
- Bertrand, M., Mullainathan, S., and Shafir, E. "A Behavioral Economics View of Poverty." The American Economic Review, 2004, 94(2), pp. 419-423.
- Field, E. and Pande, R. "Repayment Frequency and Default in Micro-Finance: Evidence from India." Institute for Financial Management and Research, Centre for Micro Finance, Working Paper Series No.20, 2007.
- Froot, K.A. and Dabora, E.M. "How are Stock Prices Affected by the Location of Trade?" Journal of Financial Economics, 1999, 53: pp. 189-216.
- Gilovich, T., Vallone, R., and Tversky, A. "The hot hand in basketball: On the misperception of random sequences" Cognitive Psychology, 1985, 17: pp. 295-314.
- Kahneman, D. and Tversky, A. Choices, Values and Frame. Cambridge: Cambridge University Press, 2000.
- Karlan, D. and Mullainathan, S. "Is Microfinance Too Rigid." Centre for Microfinance and Innovations for Poverty Action Research Note, 2006.
- Karlan, D. and Valdivia, M. "Teaching Entrepreneurship: Impact of business training on microfinance clients and institutions." Yale University Economic Growth Center Discussion Paper No. 941, 2006. Available at Financial Access Initiative: [http://library.financialaccess.org/pdf/I15\\_FAI\\_TeachingEntrepreneurship.pdf](http://library.financialaccess.org/pdf/I15_FAI_TeachingEntrepreneurship.pdf)
- Lamont, O.A. and Thaler, R. M. "Anomalies: The law of one price." Journal of Economic Perspectives, 2003, 17(4): pp. 191-202.
- Mullainathan, S. "Development Economics Through the Lens of Psychology." World Bank Working Paper, Report No. 28974, 2004.
- Mullainathan, S. "Psychology and Development Economics." Department of Economics MIT, 2004 working paper.
- O'Donoghue, T. and Rabin, M. "The economics of immediate gratification." Journal of Behavioral Decision Making, 2000, 13: pp. 233-250.
- Trope, Y. and Fishbach, A. "Counteractive Self-Control in Overcoming Temptation." Journal of Personality and Social Psychology, 2000, 79(4): pp. 493-506.
- Tversky, A. and Kahneman, D. "Belief in the Law of Small Numbers." Psychological Bulletin, 1971, 6(2): pp. 105-110.
- Wertenbroch, K. "Consumption self-control by rationing purchase quantities of virtue and vice." Marketing Science, 1998, 17: pp. 317-337.