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RETHINKING POVERTY

Behavioral insights for development and social inclusion

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To my parents,
for having always encouraged me to travel
with the body and the mind.

To my friends and classmates,
Sofia, Federica and Camillo
for having supported me during this journey.

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ABSTRACT

The complexity of human mind is often underestimated. Every day, we are subjected to social, psychological and cognitive constrains which affect our choices. One of them is scarcity. The circumstances of poverty, the most meaningful representation of scarcity, significantly reduce the cognitive resources that individuals employ in every-day decisions. This thesis intends to underline how a psychological informed understanding of economics can provide an essential contribution in improving the outcomes of development and social inclusion programs. I will propose a number of behavioral insights in the contexts of saving, health and education to address the cognitive failures which affect the poor, namely self-control and limited attention. A peculiar attention will be then dedicated to the social barriers deriving from ethnic and gender stereotypes and fostered by mental models. To demonstrate the role that behavioral economics can play in promoting gender equality, I will report a qualitative study in the developing context and propose some policy interventions for developed countries.

KEY WORDS: behavioral economics, development, poverty, social inclusion

INTRODUCTION

We are currently living in a world in which economic growth is increasingly affecting the polarization of wealth distribution. While the number of people living under the poverty line is steadily decreasing since the 90s (World Bank Group, 2016), it remains fundamental to consider the significance of the global poor as economic actors, in both developed and developing countries. However, it is often neglected that poverty is embedded not only in an economic status, but also in a wider context which can effectively modify the decision-making process. Chapter 1 argues that the psychological condition of scarcity, under which poverty falls, have been proven to diminish both the cognitive capacity and executive control of a person. Poverty results, de facto, to be also a state of mind. The main issue relies in the fact that most development programs fail to take into account the psychology of the individual and, in particular, the psychological burden which affect the peculiar condition of scarcity. Shafir and Mullainathan (2013) identified this burden as a reduction of an individual's 'bandwidth', namely his mental capacity. Such phenomenon stucks the person in a psychological mental state that influences his decisions, perpetuating the condition of poverty.

Chapter 2 affirms that acknowledging the cognitive and social dimension of poverty is the first step towards an effective formulation of development policies. Behavioral economics today, as the incorporation of psychological insights into the study of economic decision making, is giving many contributions to the formulation of pubic as well as private programs. Behavioral insights teams are currently playing a growing role in assisting governments and private agencies all around the world. Recent evidences suggest that the revolutionary concept of 'nudging' introduced by Thaler and Sustein (2008) can be applied also to the decision-making of the poor, producing effective results. The lack of self-control and limited attention, namely the two major behavioral failures to which the poor are subjected, can lead the person to engage in less-than optimal choices regarding investments in various domains, such as saving, health or education. The employment of commitment devices, reminders, well-timed subsidies and micro-incentives are only some of the behavioral insights which can be applied to correct the biases of the human mind, together with changing the default options of saving contracts. Such small interventions, properly targeted to correct the behavioral bias, can be easily incorporated in existing programs.

Chapter 3 will deal with the issue of poverty when connected with the phenomenon of social exclusion. People can be prevented to entirely participating in society due to motives which go behind the structural barriers identified by the rational choice theory. More attention should be given to the socio-psychological barriers which impede social inclusion, such as implicit discrimination, self-stereotyping and adaptive preferences. Bandwidth can be constrained not only on socio-economic

grounds, but also by the ethnic and gender stereotypes fostered by mental models. Indeed, mental models lead us to create categories, since we do not possess sufficient cognitive resources to process all the pieces of information that the world provide us. When a social group share certain mental models, it will inevitably privilege some social norms rather and others. For such reason, behavioral insights can play an important role in shaping an inclusive behavior. These policies can be defined 'inclusion nudges', since they are designed as levers to mitigate unconscious associations. In a society where gender equality is nor fairly reached, inclusion nudges can empower women with greater agency. A qualitative study in the developing country of Kyrgyzstan together with some policy proposals for the developed country of Italy will be employed to support such argument.

This analysis intends to underline how a psychological informed understanding of economics can provide an essential contribution in improving the behavior of people at the edge of poverty and in promoting more inclusive societies.
The effectiveness of behavioral economics insights can be demonstrated empirically and incorporated in policies of governments, international agencies and the non-profit sector. I believe that we are living in an historical moment that needs to recognize the limits of the classical economic theory and perceive new policies with a more comprehensive and human approach.

I. THE POVERTY MINDSET

1.1. Scarcity: a broad concept

'Everywhere is walking distance if we have the time.'

Steven Wright

People's minds perform differently when they experience the lack of something. Sendhil Mullainathan, professor at Harvard University, describes his preoccupations about failing to timely complete his professional obligations. Lately, he did not manage to meet some deadlines, postponed numerous meetings and ignored diverse e-mails that now request attentions. Responsibilities seemed to be more than the available time. However, he still accepts to engage in a new-coming proposal of contributing to the writing of a book chapter on the behaviors of low-income Americans. One of them is Shawn, an office manager in Ohio, who is missing the payment of numerous bills and whose finances are extremely tight, leading him at the edge of the debt pool. However, Shawn too fails to resist temptations and ends up overspending on his daughter birthday gift (Mullainathan & Shafir, 2013). Mr Mullainathan's and Shawn's scenarios, despite describing completely different circumstances, mirror however on one feature: they both experience the effects of scarcity. The professor experiences the lack of time, while the office manager the scarcity of money. In this context, scarcity can be subjectively defined as 'having less than you feel you need' (Mullainathan & Shafir, 2013: 4). Obviously, the subjectivity of this interpretation should be then combined with more objective measurements of scarcity, but we will deal with this question in the subsequent section. For now, it is important to conceive scarcity with a broader meaning, the one that connects situations that appear very different, such as the lack of time, the shortfall of money, the reduction of food when engaging in a diet or the limitation of social connections. If we go behind the physical constraints and material deprivation involved in scarcity, we understand that scarcity is also a mindset.

The psychological status of scarcity directly affects the behaviors, choices and approach to problems. Entering the condition of scarcity, feeling a gap between the needs and the means to fulfill them, our attitudes to decision-making and our attention distribution change. Scarcity captures minds because it is indeed important and worthy of our consideration. In particular, it creates two adverse effects: on the positive side, scarcity pushes us to focus on the most pressing needs, prioritizing our choices and leading us to be more effective. However, while prioritizing some issues, it can lead us also to neglect others. When experiencing scarcity repeatedly, these deficiencies can come at a cost, a cost that is reflected in a reduction of our mental capacity, since part of our mind constantly returns on the scarcity problem. This mental tax has been defined as a reduction of a person's bandwidth. Therefore,

while focusing on the alimentary expenses of the week, a person may miss the payment of the month bills. In the same way, focusing on tomorrow's deadline may lead us to neglect the reading for next week's lecture. Attentional neglect comes together with the challenge of resist temptations, as happened with Mr Mullainathan's new project and Shawn's daughter birthday gift (Mullainathan & Shafir, 2013).

Costs and benefits of scarcity can be better described dividing them in the phenomena of focusing, tunneling and the bandwidth's reduction.

1.1.1 The focus dividend

We all have experienced circumstances where we managed to complete successfully challenging tasks under stressful time constrains. Time scarcity often leads us to use what we have more effectively. Many psychologists dedicated their work to understand the eventual benefits that an imposed deadline can bring on productivity. In their study, Ariely & Wertenbroch (2002) paid two diverse groups of university students to copyedit some papers, assigning a compensation coherent with the number of mistakes corrected and the respect of the fixed deadline. One group was given a strict deadline, while the other a long one. The results showed that the students with less available time performed better in the task and managed to find more errors in the papers. Externally-imposed deadlines seem consequently to have an extremely positive impact of productivity. Even myself, while writing this dissertation, I am aware of the final university deadline, without which I would probably procrastinate my work for several weeks. People are also often aware of their procrastination problems and tend to bind themselves to a self-imposed time-limit: however, in the same study it has been demonstrated that self-imposed deadlines are not as effective as the externally imposed ones (Ariely & Wertenbroch, 2002). In a similar way, it has been discovered that during group meetings the first half of the available time is often wasted on irrelevant details. However, at a certain point the participants become aware of the limited amount of time left: in the so called 'midcourse correction' they enhance their productivity, focusing on the main issues and working profitably in cooperation until the established meeting outcome is reached (Gersick, 1988).

These are only some of the possible manifestation of time scarcity, which lead the person to get the most out of the remaining time. This phenomenon is denominated the *focus dividend* (Mullainathan & Shafir, 2013) and it is not limited only to the temporal sphere. To prove it, a group of experts tried to re-create the scarcity condition in the lab through a video-game inspired to Angry Birds. Participants were diversified in rich and poor subjects up to the number of shots available to them, generating in this way an artificial condition of scarcity. Quite obviously, on the overall the subjects

holding more shots scored more points. However, even if rich players possessed five times more shots compared to the poor, they did not obtain five times more points. Having a closer look at the behaviors of the players, they measured how long each of them spent on aiming each bullet: poor participants allocated several more time for each shot, being more precise and judicious and therefore more accurate in hitting the target. Scarcity engaged them leading them to be, on the overall, more efficient than the rich players (Shah, Mullainathan & Shafir, 2012).

Such experiments lead us to understand then that 'scarcity captures the mind' (Mullainathan & Shafir, 2013: 26), and the most significant aspect of it is that this happen both when we act both subconsciously and deliberately. Measuring time, money or shots, scarcity will catch our attention.

1.1.2. The tunneling tax

The focus dividend effect demonstrates that scarcity brings benefits. However, shifting our entire focus on one thing inevitably leads us to disregard others, as it happens every day when we try to engage in any kind of multi-tasking activity. You may think to be perfectly able to manage a phone call while driving, however it has been proved that this action can be more dangerous than driving over the legal alcohol level. The issue often relies in the fact that focusing cuts off other things: while working on project with an extremely close deadline, you may be so absorbed and overwhelmed with work to completely forget to pick up your child at school. Scarcity not only focuses, but also *tunnels,* cutting off other matters that deserve attention (Mullainathan & Shafir, 2013). The term derives from the concept of the tunneling vision, namely the phenomenon in which people tend to concentrate more on the targets at the center of the eye's retina, while neglecting peripheral information (Williams, 1985).

When tunneling, in the same way as when ignoring the farthest information from the eye retina, we inhibit other concepts. A study proved the functioning of the inhibition mechanism by asking to some subjects to list a number of life goals, such as being 'successful'. Half of the subjects had the task to name personally important goals, while the others just any possible type of goal. In the second round instead, it was asked to everyone to name the biggest possible number of any kind of goal. Results showed that the group which started listing the most meaningful goals then named 30% fewer goals in the second round. Committed goals inhibited the accessibility to other alternative ones: this is a concept well-known in psychology as *goal inhibition* (Shah, Friedman, & Kruglanski, 2002). Goal inhibition is active part of the tunneling behavior, since scarcity stresses you to deal with immediate needs, inhibiting other objectives and concerns.

Tunneling is the negative outcome of focusing. In managing scarcity then, there is constant trade-off between benefits and costs. This happens routinely at the personal level, but directly affects also the choices of companies and businesses. For example, in periods of recessions companies often take the decision to cut the marketing budget to the minimum, even if these moments are the ones in which the marketing aid is most needed. The company, being tunneled on the urgent budget cuts, sees the benefits of the marketing campaign fall outside its immediate concerns (Mullainathan & Shafir, 2013).

For now, managing scarcity looks like a trade-off between the efficiency gains from focusing and the psychological taxes imposed by tunneling. Such a trade-off might be still manageable. However, there is another tax created by scarcity, the one that looms larger than the others. We will deal with it in the subsequent section.

1.1.3. The bandwidth tax

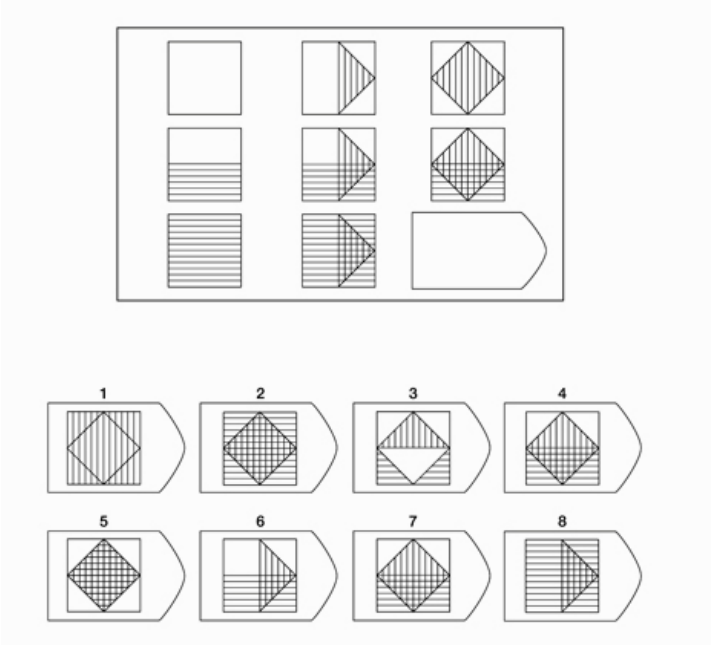
Scarcity obstructs our capacity to focus on other things. If we try to shift our focus, scarcity will drive us back to its tunnel. For this reason, we can think of scarcity as not only as reducing our attention, but also our mind. '*Having less mind*' means that we end up being unable to perform also some of our principal capacities. Mullainathan & Shafir (2013) coined the term *bandwidth* to give a clearer idea of this concept. Bandwidth is defined by them as a measurement of attention, computational capacity, ability to pay attention, to keep self-control and maintain our plans. Scarcity affects our bandwidth by reducing it, leaving a limited amount for our use, exactly in the same way as when our laptop's browser starts working extremely slow because we are using simultaneously others background programs (Mullainathan & Shafir, 2013).

Recalling the capstones of behavioral economics, our brain works through a two-system model. System 1 is fast, while system 2 is slow. The first system is indeed automatic, associative, intuitive and operates without effort. The second instead is serial, effortful, controlled and elaborates the more complex problems (Kahneman, 2011). As we have seen previously, scarcity captures our minds both when we think fast and when we think slow. However, when analyzing the concept of scarcity in decision-making, what ends up being more affected is our System 2 process. In fact, when our mental capacity is taxed, we have less mental resources to engage in the laborious mental mechanisms of System 2. In order to capture the bandwidth reduction and better define what bandwidth is, we can refer to two main components of the human mental functions, namely the cognitive capacity and the executive control. They are particularly useful concepts since they imply that bandwidth is

measurable in the lab. Psychologist can thus impose a 'cognitive load' in order to re-create the bandwidth tax and calculate its impact (Schilbach, Schofield & Mullainathan, 2016).

The cognitive capacity represents our ability to answer problems, involve in logical reasoning and absorb information. Its most meaningful component is fluid intelligence, which is universally measured with the Raven's Progressive Matrices test, which is often incorporated also in the majority of IQ tests worldwide. Executive control measures instead the capacity to regulate our cognitive activity such as the ability to allocate attention, planning, managing impulses and contain actions. The most significant impact of a reduction in executive functions is reflected on self-control, one of the most debated topics in the study of psychology (Mullainathan & Shafir, 2013).

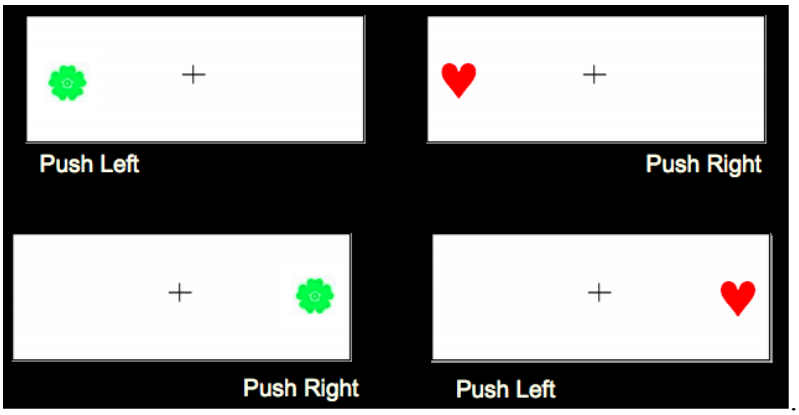
Here are some practical examples to make these concepts clearer:



Source: Shafir, E. and Mullainathan, S., 2013. Scarcity: Why having too little means so much. NY, Times Books.

Figure 1:
Raven's Progressive Matrices to measure fluid intelligence

Select the symbol that complete the last box.



Source: Schilbach, F., Schofield, H. and Mullainathan, S., 2016. The psychological lives of the poor. American Economic Review

Figure 2:
Hearts and flowers task to evaluate executive function

Participants view a set of stimuli on a screen. They have to press the key on the same side of the flower and on the opposite side of the hearth.

A study carried out by Mullainathan and his colleagues in an American shopping mall tried to measure the impact of an artificially imposed situation of scarcity on both executive control and fluid intelligence (Mani et al, 2013). Having firstly divided participants between 'rich'' and 'poor' subjects through a median split of their income, they were then presented with hypothetical scenarios which described financial problems that they could experience in their everyday life. After such scenarios, they were asked to complete some Raven's problems such as the one showed above, in order to measure their cognitive function. The assumption was that, even if they were not effectively making any financial choice, poor participants should have been affected and distracted by the preoccupations derived. In fact, poor subjects performed significantly worse. Comparing the results of the cognitive tests to the ones carried out in another study of the same size which measured the cognitive capacities of subjects after normal sleep time and forced no-sleep (Linde & Bergströme, 1992), it came out that the effects of raising monetary concerns on cognitive performance are *as high* as passing an entire night without sleep. Executive control too appeared to be reduced: through the use of the hearts and flowers cards showed above, the poorer participants hit the correct buttons 83% times in the normal financial scenario and 63% of times in the financially stressful one (Mani et al, 2013).

The effects of scarcity on the human cognitive functions have been proved also in many other areas. Numerous studies have analyzed the consequences of dieting on the reduction of our mental resources. In particular, the worse cognitive results performed by dieters are proved to be caused not only by the metabolic lack of calories, but also by the preoccupations derived from the dieting regime, since dieters' mind ends up being constantly occupied by thoughts about food (Jones & Rogers, 2003). A similar discourse could be rehearsed in the case of the lonely, since the absence of human connections has been proved to negatively affect fluid intelligence (Baumeister et al, 2002).

Weather we experience the lack of time, money, calories or social connections, this will have an impact on our bandwidth. Ending up with fever mental resources, we become more impulsive, we have less attention and we fail to resist temptations. Most of the times however, these outcomes could be misinterpreted. A busy office manager failing to pick up his child at school appears as a bad parent. However, he may be only mentally taxed. The problem relies not in the person himself, but in the context of scarcity.

1.2. Poverty and mind

"So if you want to understand the poor, imagine yourself with your mind elsewhere. You did not sleep much the night before. You find it hard to think clearly. Self-control feels like a challenge. You are distracted and easily perturbed. And this happens every day. On top of the other material challenges poverty brings, it also brings a mental one… Under these conditions, we all would have (and have!) failed."

Mullainathan & Shafir

1.2.1. Poverty in the world: going behind the poverty line

Poverty is surely one of the widest representation of scarcity worldwide. According to the UN Sustainable Development Goals, poverty is '*more* than the lack of income and resources to ensure a sustainable livelihood', since it is reflected in hunger, malnutrition, social exclusion, discrimination and non-participation in decision-making, as well as the lack of access to basic services such as education (UN Sustainable Development, 2016). The most recent measures of global poverty in 2015 estimated 10.7% of the world population living under the extreme poverty line of US$1.90 (2011 PPP U.S. dollars): this represents 767 million people. However, it confirms a general positive trend going on since the 1990s, that saw a rapid reduction of the poverty headcount ratio of an average of 1.1 percentage points a year. This trend was caused especially by the considerable progress made by South-East Asia and the Pacific region, while the majority of poor remain concentrated in Sub-Saharan Africa. The average profile of the global poor draw by the World Bank describes them as young, living in rural areas, mainly employed in the agricultural sector and with low formal educational background (World Bank Group, 2016).

However, it is important to highlight that poverty is not a phenomenon that affects only developing countries such as India, China, Nigeria, or Congo. Currently, 30 million is the estimated number of children growing up poor in the richest country of the world (UN Sustainable Development, 2016). Developed countries are therefore meaningfully affected and worth of consideration. In the United States poverty is particularly widespread: in 2016 the poverty rate was 12.7 percent, namely 40.6 million Americans living under the poverty thresholds established by the United States Census Bureau. Poverty estimates are thus differently measured in the US, where the Census Bureau adopts every year a set of money income thresholds differentiated by family size and composition. Under such thresholds, the household has a pre-tax cash income insufficient to satisfy basis needs (such as food). For example, in 2016 a family of four members living with less than $24,563 per year (equivalent to about $16,8 per person per day) is classified as living under of the poverty line (U.S. Census Bureau, 2017). Even if such a threshold is roughly nine times higher than the extreme poverty line used to measure poverty in low-income countries, it is reasonable to assume that an individual in

the condition of poverty in the United States will be psychologically affected in a similar way. The previously described study carried out in the American shopping mall verified that financial anxiety meaningfully influenced the cognitive performances of low-income subjects. Therefore, from now on, when talking about the poor, I will not be referring only to the percentage world population living under the standard poverty line, but also to all those individuals which are dealing with a precarious financial position in the developed world.

1.2.2. The psychological outcomes

When talking about scarcity, the circumstance of poverty deserves a peculiar attention. Even if the logic of scarcity works similarly across different domains, its consequences can more serious for the poor. While the busy worker could decide to take a vacation, and the dieter could suspend temporarily his regime, one cannot decide to simply stop to be poor. This lack of discretion makes scarcity a continuous, non-manageable condition which is worthy of our attention. In fact, the poor are often short of coping mechanisms and therefore they not only have greater exposure, but they are also more likely to feel the cost of a mistake in a stronger way then the rich. The main problem of money scarcity relies furthermore in the fact that it is fungible with other types of scarcities: a person may decide to save and work more hours in order to ameliorate its financial situation, but this will lead to have less time, less possibilities for having social connections and lower quality (or quantity) of food affordable. When talking about poverty from now on, we will deal with the economic scarcity scenario in which getting what you need is simply not feasible (Mullainathan & Shafir, 2013).

It is often common assumption that poverty is the outcome of people's character failings and erroneous values, or their misconceptions of the value of investments in education, saving and diseases prevention. In many developing countries the poor do not send their children to school, do not vaccinate them, do not save sufficiently and tends to over-borrow. The majority of poor in the US are obese. The poor mistake in various domains, yet attributing their deviant behaviors only to the culture of poverty or to their attitudinal and psychological short-fallings does not take into consideration the constrains beyond the control of the person and the cognitive resources demanded to take decisions. The main claim of this section will be based on the concept that it is instead the *context of poverty*, namely the condition of *scarcity*, that vigorously affects the choices of the poor (Mullainathan & Shafir, 2013). Both poor and not poor people are affected in a similar way by specific social, psychological and cognitive constrains can influence their choices.
In particular, the poverty context can affect the decision-making process in three main different ways:

a) Poverty generates *poor frames* through which people see opportunities;
b) The *social context* that surrounds poverty imposes cognitive taxes;

c) Poverty *reduces bandwidth* and therefore directly consumes cognitive resources.

(World Bank, 2015)

First of all, poverty lead people to have a different vision of the world that surround them. A low-income person is more likely to feel incompetent and unappreciated and this can prevent him to try to improve its situation. He may not take benefit of important economic opportunities only because of a deficit of aspirations or for the fear of failing and the shame that derives from it. Empirical studies demonstrate a strong correlation between poverty, lower aspirations and lower willingness to take risks. An analysis carried out in France demonstrated that lower social and economic backgrounds can influence student goals and aspirations. Lower background students not only showed limited options of their academic or employment future in mind, but also expressed the fear of their peers' pressure as lowering their ambitions. In general, even if showing equal academic achievements, wealthier students demonstrated higher academic aspirations such as the willing to attend a Master's degree (Guyon & Huillery, 2014). Poverty can then mitigate people's capacity to aspire. Poor frames can therefore modify people's attitudes, and evidences demonstrates that changing the frame through which the person conceive himself can effectively improve cognitive function. We will deal with such interventions in Chapter 3.

Secondly, the environment of poverty can bring further cognitive taxes. Developing countries often lack the adequate social and physical infrastructures that diminish the cognitive burden of people in wealthier countries. The absence of accessible credit, saving and insurance markets lead communities to often rely on informal networks to buffer their income shocks, asking loans from friends, relatives and neighbors. However, this means that someone else is renouncing to his resources to provide help, and this impose others psychological burdens (World bank, 2015). Such a situation may lead a person to try to isolate his income from this kind of social commitments, as we will see in Chapter 2. Moreover, the presence of low quality infrastructures such as malfunctioning electricity or unreliable water supplies lead the person to focus more attention on what happens at home, generating preoccupations and lowering productivity and consequently income (Banerjee & Mullainathan, 2008). On the contrary, the presence of additional channels and aids, such as also organized child care, may relieve the psychological taxes felt by the poor.

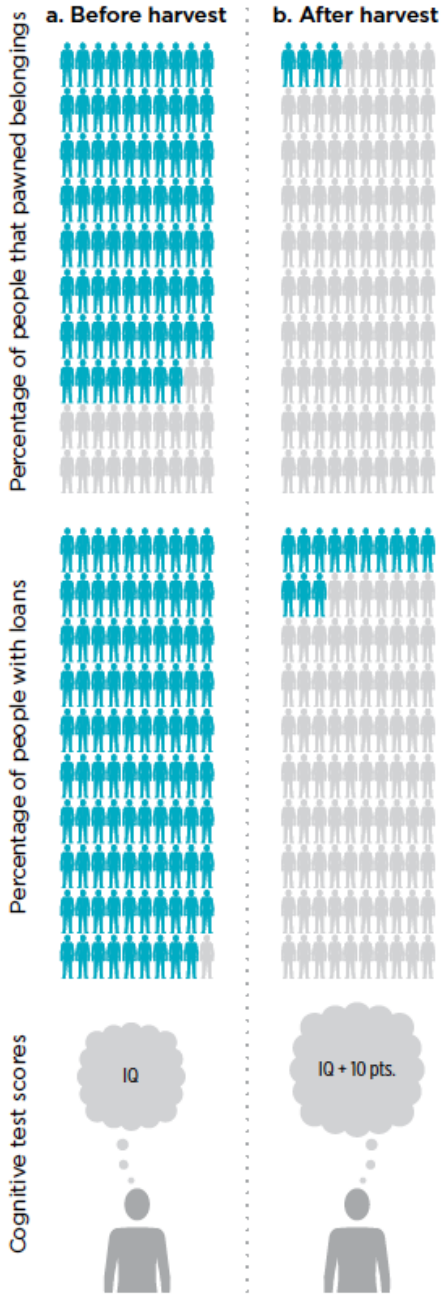
However, all these issues of access and aspirations seem not to be enough to explain the situation of poverty. In the USA, people under Medicaid do not take their medicines regularly even if they are provided for free. Farmers in developing countries fail to weed even if they are aware of its benefits on the crops and possess the means and the time between harvests to carry out the work. The crucial issue relies in behavior. Poverty is not only a shortfall of money, but even more a shortfall of

bandwidth (Mullainathan & Shafir, 2013). We have seen already of various forms of scarcity may tax our cognitive resources. In the next section, we will see in deeper details what the bandwidth tax means for the poor.

1.2.3. Poverty consumes bandwidth

We have already seen how financial concerns can tax bandwidth in the experiment of Mullainathan and his colleagues described in point 1.1.3. However, the subjects selected in the mall were facing an artificial situation of scarcity. Therefore, the experts decided to carry out the second part of the experiment in the field, and for this purpose they strategically chose to analyze the behavior of sugar canes farmers in Tamil Nadu, India. These farmers have the peculiarity to receive their income just once a year, when it is harvest time. Consequently, before the harvest they are wealthy, while after they are poor. Their condition of scarcity was reflected in their financial behavior: in fact, on a sample of 464 farmers, before the harvest season 78% of them was likely to pawn belongings compared to 4% after-harvest, and 99% was more likely to detain loans compared to 13% after-harvest. This permitted to analyze the cognitive performance of the same person under a natural condition of scarcity and non-scarcity. As in the mall experiments, they administered them some Raven's Matrices questions to measure their cognitive capacity, and the Stroop task (a slightly different but similar task respect to the hearts-flowers one) in order to measure executive control. As expected, both fluid intelligence and executive control performances were way lower in pre-harvest farmers compared to post-harvest subjects. In particular, subjects in financially non-stressed period obtained around 25% more correct answers in the Raven's test, which is comparable to around 10 more IQ scores (see figure 3). Moreover, in the pre-harvest period they incurred in around 15% more errors in the executive task (Mani et al, 2013; World Bank, 2015). These results concretely demonstrated that the condition of poverty

Figure 3:
An exemplification of the results of the experiment carried out on sugar cane farmers in India.



Source: World Bank, 2015; World development report 2015: mind, society, and behavior, World Bank Group, Washington, District of Columbia

effects both the cognitive and the executive domain. Poverty taxes bandwidth, restraining our fundamental capacities.

There are diverse factors which affect bandwidth reduction under the condition of poverty. As we have seen already in the previous experiments, the most meaningful role is surely played by monetary concerns. However, there are numerous other circumstances which should be taken into consideration (Schilbach, Schofield, & Mullainathan, 2016). The first of them is surely nutrition. A study carried on in Chennai analyzed the impact of diverse calories intakes on cycle-rickshaw drivers, providing half of the subjects with a surplus of 700 calories a day. These well-fed individuals performed better both in the solution of cognitive problems and in physical tasks, leading to an overall increase in labor supply of nearly 10% over five weeks. Cognitive problems assigned to them comprised tasks which necessitated the use of mental stamina (such as looking for specific set of symbols in a grid), making them a good measure of the person's bandwidth. In such tasks, subjects with a higher caloric intake ameliorate their performance of about 12% compared to the first week (Schofield, 2014).

Another element that can tax the bandwidth of the poor is alcohol consumption. It is common awareness that high levels of alcohol consumption are associated with lower income levels: by obstructing cognitive functions alcohol may affect decision-making and subsequently lower productivity (Dean, Schilbach, & Schofield, 2017). Alcohol is actually a temptation good, namely a good that provides for immediate utility and gratification but does not provide utility in the future (Banerjee & Mullainathan, 2010). The theory of 'alcohol myopia' supported by Steele and Joseph (1990) proved scientific evidence on the consequences of alcohol on human mind. Reducing the attention span and leading individuals to focus of present and salient issues and desires, alcohol effectively narrows bandwidth.

Other factors can have an important role: for example, poor people with restricted access to health services who experience chronic physical pain may have strong repercussions on their cognitive resources. Recent studies also affirm that a situation of economic uncertainty worsens the actual perception of pain of a person (Chou et al, 2016 as cited in Dean, Schilbach, & Schofield, 2017). This can happen also when they engage routinely in hard physical labor. Pain can lead to focus deficits and can influence memory, attention and executive function. Another phenomenon that often affects the psychological conditions of the poor is sleep deprivation. Many scientific evidence supports the negative repercussions of sleep deprivation on neuro-biological functions and in particular on logical reasoning and memory (Linde & Bergströme, 1992). Even if the absence of sleep can equally influence people at any income level, the poor subjects living in urban areas are likely to be more affected since they often live in noisy, overcrowded, and uncomfortable environments. Many other

environmental elements such as heat and air pollution may come into consideration as having an impact on bandwidth. However, evidence on their repercussion on cognitive functions remains for now limited. The very last factor that can be taken into consideration is depression: the poor are more likely to be subject to stress and depression triggered by their lower socio-economic status. The derived symptoms such as sleeplessness and appetite loss may narrow bandwidth as described previously (Dean, Schilbach, & Schofield, 2017; Schilbach, Schofield, & Mullainathan, 2016).

The poor therefore can end up short of bandwidth in diverse ways. This mental taxation should not be underestimated since a wide spectrum of our behaviors relies on bandwidth. In fact, an over-taxation of our mental capacity may lead to various and cumulative outcomes:

- More *propensity to forget*, especially regarding what is known in psychology as 'prospective memory', namely those memory that requires you to remember a previously planned action in a certain moment in time (e.g. picking up your child at school, taking your medication);
- Less *productivity,* as previously discussed, since the majority of work tasks require working memory. The bandwidth tax takes away important metal resources that may be fundamental for works that require more cognitive abilities;
- Less *capacity to process new information*, since much of the mind is focused elsewhere. In the developing word various public programs provide education and campaigns in order to promote healthy attitudes or to improve agricultural performance. Not surprisingly, most of those programs fail to reach their targets;
- Less *self-control,* relying on executive control as explained before, is directly taxed by bandwidth. A limited self-control implies that it is more arduous to control our impulses and that we weight immediate rewards heavier than future ones. This is one of the most salient points since, as we will see in the next chapter, self-control strongly affects an enormous amount of the most fundamental decisions taken by the poor, especially regarding savings and investments.

(Mullainathan & Shafir, 2013)

Hence, what the poor lack most is not money or food, but bandwidth. Even if bandwidth cannot be permanently damaged by the condition of poverty, on the long run the consequences on the cognitive functions of the person can be critical.

II. BEHAVIORAL DEVELOPMENT POLICY

2.1. Behavioral design for poverty

'Behavioral economics provides a better way to understanding human behavior. Better understanding leads to better diagnosis, which in turn leads to better-designed solutions.'
Datta & Mullainathan

2.1.1. The paths towards he behavioral revolution

Behavioral economics is itself a new subject having been born only in the 70s, yet today many behavioral units are already assisting governments and private organizations all around the world. The country that made the first step towards the behavioral approach to policy has been the United Kingdom, which established in 2009 the so called 'UK Nudge Unit', the first Behavioral Insights Team assisting a government. Many other countries such as the USA, Singapore, France, Australia, Canada and Denmark followed this path, together with the European Commission which in 2016 presented the first report on the behavioral policies initiative of 32 member countries. The advancement toward this behavioral revolution has been made by Thaler and Sunstein (2008) and their revolutionary concept of 'nudge', which is an 'aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives (Thaler and Sunstein, 2008: 6). Nudging usually implies very limited (or null) costs and provides immediate results, maintaining at the same time the freedom of the individual. It can also lead to wider and more significant results compared to more coercive and expensive tools (Sustein, 2014).

If nudging is having such a strong impact on world-wide policy initiatives, and at the same time implies low costs, why not using it to address the complex issue of poverty? Why not nudge the poor? All the previous considerations made on the psychological taxes imposed on the poor should lead us to reflect on the importance of properly designed anti-poverty polices. Behavioral economics, combining psychological insights that take into account the decision-making process of the person, can provide new lenses through which designing new development programs. After the publication of the '2015 World Development Report on Mind, Society and Behavior' the World Bank has indeed opened the Mind, Behavior and Development Unit, an entire team dedicated to the research and design of behavioral informed interventions in the area of development (World Bank, 2018). In a similar way, the OECD's Regulatory Policy Committee is currently working alongside many members and non-members countries to apply behavioral insights in the amelioration of public

policies (OECD, 2013). Behavioral applications for development are extremely recent but have been proved to be concretely effective.

2.1.2. Behavioral design principles: building bandwidth for the poor

Developing a behavioral design solution requires passing through different stages: *defining*, *diagnosing* and *designing* (Datta & Mullainathan, 2014).

First of all, behavioral economics changes our *definition* of the scope of the problem. The failure to vaccinate children in low-income settings is often attributed to a problem of access. Instead, a behavioral approach underlines the fact that people may continue not to vaccinate their children even when access is solved. The second peculiar characteristic is that it changes how we *diagnose* the problem. For example, when approaching the problematic of school enrollment in developing countries, we may think that parents decide not to send their children to school because they no not comprehend the value of education. However, many fathers living in rural India take this decision in May, a period of the year in which they experience a shortfall of money since they have earned the majority of their income from the harvest season more than five months before (WDR, 2015). Identifying the behavioral 'stress points' is the essential point in the systematic process of 'behavioral mapping'. This procedure generates quantitative and qualitative surveys which identify the problem decomposing the behaviors in a number of parts, in order to find where the 'behavioral bottleneck' relies (Datta & Mullainathan, 2014). The analysis of data coming out from this stage generates a behavioral diagnosis that lead then to the *design* of effective interventions. Datta & Mullainathan (2014) have identified a general set of behavioral design principles are usually applied in this stage:

1. *Employment of commitment devices in order to ease self-control*. Easing self-control is essential in order to match intentions and actions. Interventions such as restrictive accounts and payment schemes are usually utilized in order to increase savings rates, as we will see in the next section;
2. *Diminishing the necessity for self-control*. Directly reducing people's need to exercise self-control is an alternative methodology. This implies for example changing the timing of payment of determinate fees (such school fees as in the previous example) in order to make them match with periods of income flows;
3. *Simplifying procedures removing complications in choosing*. It is common assumption that people engage in active decisions: however, behavioral economics discovered that people tend to passively accept the 'default option'. Adhesion to programs can dramatically change when this option is modified or when programs are designed in order to simplify forms and regulations;

4. *Adopting micro-incentives*. Small invectives can have significant consequences on people behaviors and positively affect their well-being. In the field of health in developing countries, small monetary incentives can increase take-up rates in HIV or AIDS control programs;
5. *Utilize reminders in order to diminish inattention*. Various typologies of reminders, such as text messages or phone calls can improve savings and health-programs outcomes. When implementing intentions results to be arduous, assisting the person in the process through targeted reminders can ease the process;
6. *Understanding the value of framing effects and match them to mental models*. When communicating with the audience both governmental and non-governmental agencies need to correctly frame their messages (such as information campaigns, letters, television advertisements and so on) in order to improve their effectiveness and match with mental models;
7. *Employ social comparison and consider social norms*. Often comparing the behavior of a person to the one of his peers can impressively change his conduct. Moreover, conformation to the surrounding social norms in the major tendency in any individual, leading them to avoid un-common behaviors due to the fear of social exclusion. Influencing the perception of such social norms, drawing attention to the correct behavior, can bring positive results, as Chapter 3 will demonstrate.

These are only some of the behavioral design which can be applied in order to develop effective solutions. They are innovative because they provide for an alternative set of assumptions compared to the standard model applied by development economists, which entails that people are un-bounded in attention, self-control and engage in deliberative decisions. In fact, the classic model focus on improving institutions in order to solve problems *between* people. This may imply reducing externalities, solving coordination problems or asymmetries of information. However, little room is then left for helping to resolve problem *within* a person. A behavioral approach to development policies implies that rather than focus on finance, health, education or child care as diverse issues, we should acknowledge that they all fall under a person's bandwidth capacity. The change relies in building institutions devoted to helping a person deal with his own decisions (Mullainathan, 2005). Fixing people behavioral bottlenecks broadens bandwidth and consequently significantly improve the outcomes of anti-poverty programs. In the next pages, I will try to provide practical evidences to show why 'nudging the poor' can be a good choice.

2.2. Self-control and limited attention

"If you want to encourage someone to do something, make it easy."

Richard Thaler

We understood that an essential stage of behavioral design is diagnosing. When diagnosing a behavioral problem in the poor, we may encounter two main behavioral bottlenecks which affects their decision-making: self-control and limited attention. As we have seen previously, a lack of both self-control and attention are direct outcomes of a reduced bandwidth capacity. We can think of them as a 'psychic commodity', since employing an amount for a given task lessens the amount available for others (Datta & Mullainathan, 2014).

Self-control not only is essential in resisting temptation and distractions, but also highly depends on how we weight the future. When trading off over time between salient rewards and future ones, the desire for immediate gratification often receives more consideration. The relative weight of immediate gains is overestimated compared to distant ones, a psychological phenomenon known in behavioral economics as 'present bias', or 'hyperbolic discounting' (O'Donoghue & Rabin, 1999). The present bias affects both rich and poor, but investing in the future may 'fall out of the tunnel' more easily when people deal with pressing financial needs, given their vulnerability to immediate pressures that lead them to procrastinate decisions. In this way, the subject ends up engaging in in less-than optimal choices regarding investment in different domains, such as saving, medical care or education (Bryan et al., 2017).

The following two sections will provide some practical policy interventions to alleviate the cognitive taxes imposed by self-control and limited attention.

2.2.1. Nudging to save

Behavioral economist has dedicated a peculiar focus on saving dilemmas in the poor. The poor in fact tend to ignore the importance of saving and instead fall in over-borrowing, a behavior that looks appealing inside the tunnel, but which aggravates the condition of scarcity outside it. Not only the poor tend to over-borrow at high interest-rates, but often employ non-formal financial instruments. The Global Findex Database 2017 of the World Bank estimates that 1.7 billion adults in the word are still unbanked (Demirguc-Kunt et al, 2017): while the wide majority of such people are surely concentrated in developing countries, the rate of American households still unbanked reached 8.2% in 2011 (Burhouse et al., 2014). For the poor, the cost of having a bank account seems to offset the benefits. Even when financial inclusion is reached, financial behaviour tends to focus on borrowing

rather than saving. Saving is not only a priority in the development agenda but should be addressed as a world-wide problem since everyone should save more.

Indeed, it is estimated that a half of Americans do not have access to a retirement saving plan or, even if they do, about a third decide not to join (Thaler, 2015). When an American worker begins a new job, if he fails to complete the form to participate in a 401(k) plan, he will end up not to be enrolled. The anxiety created by the starting of the new job lead the person to tunnel, ignoring the filling of the form and failing then his enrolment. Moreover, the complex framing of the forms and the additional effort necessary to fill it demand the employment additional cognitive resources (Mullainathan & Shafir, 2013). For this reason, nudging these people to join the programs is not easy. The behavioral intervention that has proven to be most effective consists in simply *changing the default option*, making enrollment automatic. In such a way, the employee is automatically enrolled in a 401(k) plan (with a specified saving rate), unless he decides to opt out. The revised form would be similar to this:

> *"You are enrolled in a 401(k) at 3 percent.*
> *Turn this form in if you prefer not to enroll or to enroll at a different level."*
> (Mullainathan & Shafir, 2013: 210)

Many studies have demonstrated the remarkable impact of such intervention: an analysis carried out in 2004 on three different companies measured the effects of automatic enrollment three years after his adoption. While prior to the use of automatic enrollment the companies presented a participation rate that ranged from 26% to 43%, after the adoption of the automatic saving plan the firms managed to reach an impressing participation rate that surpassed 85% (Choi et al., 2004).

A similar application of behavioural insights into saving behaviour has been carried out in the famous Save More Tomorrow program. The program was designed by Thaler and Benartzi (2004) to meet the need of those employees who desire to save more but lack the will-power to do it. The idea consisted in involving the workers of a midsize manufacturing company in a retirement saving plan in which participants agreed in advance to increase their saving deductions in conjunction with pay raises. The increase in contribution rates begins automatically with the first pay raise but is agreed a long time before, in order to avoid the present bias which may occur when taking the decision together with the first deduction. This alleviates the problems of self-control and procrastination. Moreover, thanks to the planned synchronization of pay rise and savings, the subjects never see their spending go down, and don't perceive the increases in retirement contribution as losses (Thaler, 2015). The simplicity of this idea has revealed to be also effective, since 80% of the workers maintained their enrollment in the program and managed to increase their savings rates from 3.5% to 13.6% (Thaler and Benartzi, 2004).

Exploring better 'defaults' is surely the first step to improve saving choices. However, behavioral economics always surprises providing a wide range of simple and at the same time extremely effective interventions. *Message reminders* are one of those. Limited-attention in intertemporal choice can be mitigated drawing the focus of the person back to his saving plan. Karlan, McConnell, Mullainathan and Zinman worked to bring the issue of savings 'inside the tunnel' through the use of reminders in Bolivia, Peru and the Philippines (2016). In each state, individuals opened a bank savings account designed to support their saving goals and received at the end of the month a short message or a letter to remind them to save. Here is an example of one of the text messages sent in the Philippines:

> *"You didn't deposit in the 1st Valley Gihandom account for 30 days. Don't forget to deposit, so you can reach your savings goal, make your dream come true!"*
>
> (Karlan et al., 2016: 32)

The utterly simplicity of such reminders alone led the clients who received them to save 6% more than clients who did not. Such clients were also 3% more likely to reach the pre-established saving goal (Karlan et al., 2016).

When aware of their day-to-day temptations, people may also decide to employ *commitment devices* in order to stick to their goals. Some particular saving accounts allow the clients to lock-up their founds, a decision which can be taken not only to avoid self-control problems, but also to insulate their income from social demands. In a field experiment conducted in Kenya, different typologies of saving devices were offered to the clients: between them, there was also a locked box without a key, a box with a key (to protect saving from others) and a locked saving account, to be used only in case of health emergencies. The sign-up to all these commitment devices was large, overpassing 50% after three years from the beginning of the programme, and households involved saved more on the average (Dupas & Robinson, 2013).

Another simple and sharp field intervention has been carried out by ideas42, a behavioral design lab started from a project at Harvard University. Ideas42 worked in collaboration with CARD Bank's, a microfinance institution in the Philippines which presented serious problems of dormancy and lack of balance building in his clients' savings accounts. The researchers introduced a set of inexpensive behavioral levels through the modification of the bank's savings plan (see figure 4): firstly, the form was simplified to avoid framing effects which inducted the clients to ignore, because not enough clear, the possibility of requesting a saving collector to collect the money by their residences on a regular basis. This implied also stating a precise day and time to make de deposit and the purpose of saving, with the objective of offsetting the present bias and prompt clients to think with a mental model which target final saving goals. Lastly, the experts observed the tendency of the subject to use the minimum opening deposit amount of 100 PHP ($2.25 USD) as a subconscious comparison for their deposit size. The phenomenon of anchoring is well-known in behavioral economics as an

incomplete adjustment up or down from a starting value, named 'anchor', which is in this case was the minimum amount deposit (Tversky and Kahneman, 1974). To off-set such effect, it was request to the clients to state the precise desired saving amount. This newly established anchor created the feeling of having made a commitment: however, this is a *soft commitment*, because it does not actually constrain actions as in the previously discussed case of the box (Fiorillo et al., 2014; Bortolotti et al., 2018).

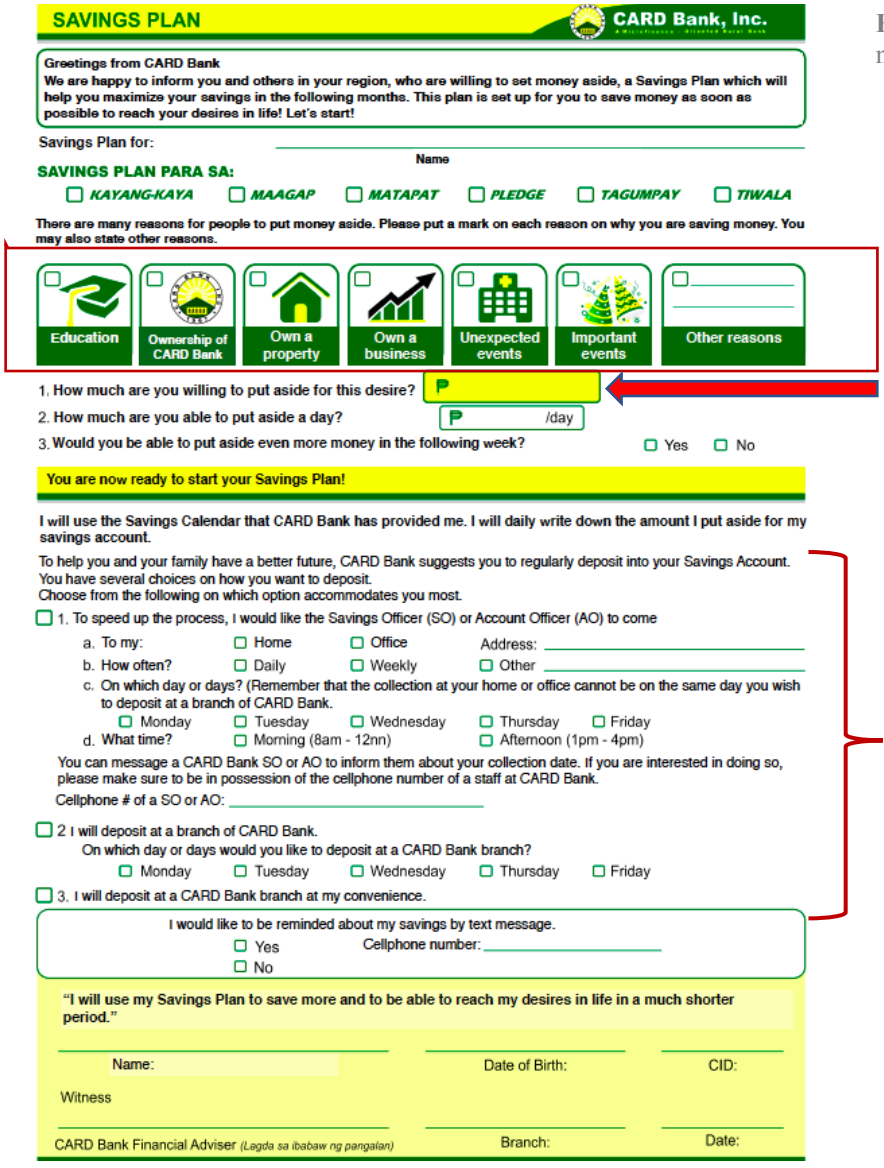


Figure 4: Translated version of the newly-designed form by ideas42

Source: translation of Fiorillo, A., Potok, L., Wright, J., Peachey, J. and Davies, K., 2014, February. Applying behavioral economics to improve microsavings outcomes. In Ideas42, pp.1-29

The contrasting outcomes of the treatment and control groups where remarkable: the average deposit amount increased by 15%, with an overall increase of the average final balances of 37%. Moreover, the treatment group engaged more often in transactions, ending the dormancy issue (Fiorillo et al., 2014).

2.2.2. Overcoming barriers in health and education

The importance of the role of both health and education in development id behind dispute. Yet, being tunneled in the challenge of navigating everyday life, the poor have little, if any attentional capacity left to issues such as vaccinating their children or taking their daily medicines. Moreover, putting away money to finance schooling requires making an immediate sacrifice which may be delayed due to other immediate pressures. As Mullainathan sais (2015: 6), 'if a middle-class American, supported by so many institutions, cannot save as much as they want, how can we expect a Rajasthani parent to consistently and stoically make all the costly immediate sacrifices to implement their goal of educating their children?'.

The first step to battle procrastination in well-being investments is to *minimize the up-front costs* of future-oriented behaviour. Simply providing free school uniforms to students in poor communities of Kenya reduced school absenteeism by 38%. The cost of such intervention amounted to only $6 per student (Evans, Kremer, & Ngatia, 2008). In a similar way, it has been documented that even a small reduction in the price of health products such as deworming tablets, dilute water (used for disinfecting drinking water) and insecticide-treated bed nets can meaningfully increase their uptakes.
However, even when a health service is provided for free, people still fail to adhere. Indeed, this approach should take into consideration the travel times necessary to benefit of health programs, reducing them and providing support with child care and transportation. More attention must be given to the trade-off between price and inconvenience, since it is often wrongly assumed that the poor would be willing to face high inconveniences at the advantage of avoiding expenditures. However, inconveniences require metal resources in order to arrange movements or solve logistical challenges. The simplest way to relieve such bandwidth tax is to provide services within villages or at least in coordinated central locations. However, this is not always possible due to logistical constrains (Bryan et al., 2017).

In such unfavorable circumstances, it can be necessary to provide an incentive as large as to counter-balance the problem. Often small, *micro-incentives*, which can have both monetary or material nature, can cause large changes in behaviors (Datta & Mullainathan, 2014). For example, in India only 44% of children receive the basic immunization package, even if it is provided for free in immunization camps. Taking a child to an immunization camp is a small inconvenience which can be overcome through the use of micro-incentives. Banerjee et al. (2010) offered to each parent who brought a child to the camps half-kilo bags of lentils. Such tiny incentive, equivalent to about a half of a farmer's daily wage, doubled the fraction of fully immunized children aged 1-3 in the district of Udaipur (see figure 5).

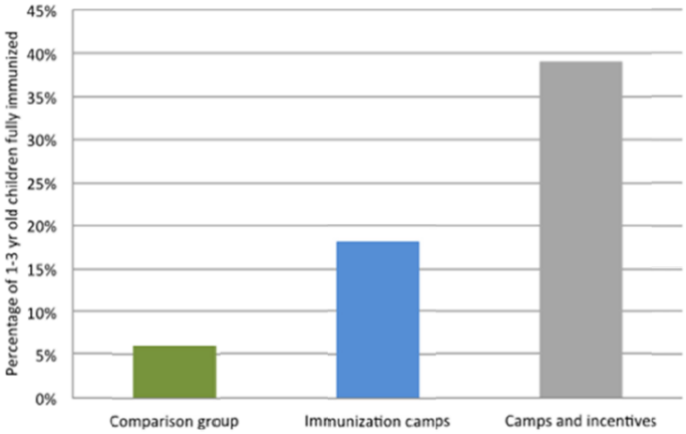


Figure 5: Micro-incentives increased immunization rates in India

Source: Datta, S. and Mullainathan, S., 2014. Behavioral design: a new approach to development policy. Review of Income and Wealth, 60(1), pp.7-35.

Micro-incentives have been widely employed also to improve policies to reward behaviors in education. Evidence from a field experiment in Dallas suggest that the provision of financial rewards for reading books can have positive effects on student achievement (Fryer, 2011). Furthermore, many developing countries deal everyday with the issue of absenteeism of booth school teachers and nurses at work. Providing small monetary incentives when exceeding a certain minimum of working days can help to deal with such phenomenon and maximize investments in health and education (Datta & Mullainathan, 2014).

Both present bias and limited attention suggest that it is important to *deliver subsidies when people are more receptive*. Indeed, we have already discussed in the experiment of the sugar can farmers that bandwidth is taxed differently in periods of financial scarcity and non-scarcity. For such reason, it is more effective to provide cash transfers when the person has more attentional bandwidth to fully benefit from their advantages. An analysis carried out in Tanzania applied this logic to increase the adherence to health insurance programs. Promoters of health insurance showed up at the various cash transfers' points during the periods of distribution. This deliberately coordinated action increased the subscription to health insurance programs of 20% (Evans et al., 2014).

Furthermore, subsidies to support education should be timed to correspond with school fees payments. Indeed, in many developing countries the payment of school fees is required in one lump at the beginning of the year. This is particularly challenging especially for agricultural laborers who often receive seasonal incomes which may not occur in the same period of school payments. Allowing installment payments should be the first step to relieve the self-control burden. In a similar way, many American poor families receive food stamps –a typology of transfer used to buy food– at the beginning of the month. The lack of self-control leads the family to over-spend at income receipt, arriving then at the end of the month without money to buy food. Changing the distribution of the

stamps, switching to two or more installments, can reduce the necessity to exercise self-control (Datta & Mullainathan, 2014).

As we can understand from the previous evidences, many opportunities exist to incorporate behavioral interventions in already existing programs. Correcting the behavioral bottlenecks to which people are subjected when facing saving, health and schooling decisions is essential when designing development programs. However, even when financial, education and medical inclusion is reached, the poor may encounter another barrier: social inclusion.

III. FIGHTING SOCIAL EXCLUSION

We have already seen that poverty is fungible with other forms of scarcities. The poor are indeed subjected to increasing problems of social isolation, which is de facto an evidence of social scarcity.

In this chapter I will argue that poverty not only leads a person to be more easily excluded from society, but that the condition of social exclusion itself further reduces bandwidth, perpetuating the condition of poverty. In such a contest, bandwidth is constrained not only on socio-economic grounds, but also by the ethnic and gender stereotypes fostered by mental models. Since the concept of bandwidth–as conceived by professor Mullainathan–has never been employed in the context of social exclusion, the majority of the following cases will be based on my personal assumption that a taxed bandwidth strongly limits the development of new mental models and therefore creates a barrier to build a more inclusive society.

3.1. The power of mental models

"People are socioculturally shaped shapers of their environments."

Markus & Kitayama

People can be prevented to entirely participate in society due to motives which go behind the structural barriers identified by the rational choice theory. In fact, when a social group is stuck at the ground of the social scale even when procedural equality of opportunity is reached, classical economics would affirm that the it possesses given features which discourage upward mobility. Behavioral economics says instead that more attention should be dedicated to the socio-psychological barriers which impede social inclusion. Socially marginalized groups can face implicit bias generated by *mental models,* which are heritage of historical institutions. In fact, there is a continuous and reciprocal relation between the individual–creator of the institution–and the institutions themselves which shape the psychology of the individual and prompt certain behaviors (Hoff & Walsh, 2017).

Human sociality, namely the natural propensity of humans to behave as part of the broader group, affects individual's behavior and decision-making. On the basis of the rational actor model, we assume to enjoy independent agency and to choose the best alternative between a menu of options that the world provides us. However, a social group which privileges certain ideas, sharing certain beliefs and experiences, may develop peculiar mental models which govern the group's choices. Mental models mediate and filter the world for us, a process which is somehow unconsciously necessary, since we do not possess enough cognitive resources to process all pieces of information as

unique and worthy of our attention. Consequently, we create categories in order to focus on what we care more about, highlighting the saliency of some information rather than other. The results to be mediated by our unconscious behavior, a process which will inevitably lead us to involuntary ignore some information (Muldoon, 2017).

Mental models indeed include 'categories, concepts, identities, prototypes, stereotypes, causal narratives and worldviews' (World bank, 2015: 62). They often emerge in a society through shared experience and can pass down through generation even if they acquire a dysfunctional nature. Mental models are considered by behavioral economist ha as meaningful variable to explain the persistency of inequality, creating new levers for development policy. When well adapted to the task at hand, mental models can enable thought and action. However, mental models can also limit the amount of information available, leading individuals to develop stereotypes and incorrect assumptions. When such a process affects systematically a group of people, mental models entrench the condition of poverty (World Bank, 2015).

In the following pages I will report mental models at the basis of the mechanism of social exclusion which work through the development of three different social barriers: implicit discrimination, self-stereotyping and adaptive preferences. For each barrier I will then propose some examples of behavioral interventions to promote trust and social inclusion. I like to define such policies as 'inclusion nudges'[1], namely levers to mitigate unconscious associations. They help the brain to take more objective decisions and to be more inclusive by default, creating new mental models or changing which model is activated in a given context.

3.1.1. Implicit discrimination

One of such social barriers is implicit discrimination. Traditional rational-choice theory provides two main explanation of discrimination. The first one is 'taste based', namely a discrimination based on the disliking of the members of a group. The second one is 'statistical' discrimination, which is derived from imperfect information of an individual's expected productivity. Differently from them, implicit discrimination is not conscious, happening to be involuntary or out of the discriminator's awareness (Bertrand, Chugh, & Mullainathan, 2005). Implicit attitudes are unintentional mental associations between a person and a given attribute and can have the same power of explicit prejudices. For example, during 1970s orchestras in the USA started to introduce screens to cover

[1] This is a newly coined term by Tinna Nielsen and Lisa Kepinski, two specialists in inclusion and diversity who founded the Inclusion Nudges initiative. To know more about their work: http://inclusion-nudges.org/.

both identity and gender of applicants when auditioning. Researchers found that this kind of 'blind' audition increased of 30% the number of female musicians selected for orchestras (Goldin & Rouse, 2000).

The belief that a certain gender, race, group or caste is inferior can influence the way the members of the given group perceive themselves, developing productivity differences which support such belief (World Bank, 2015). An experiment carried out in France on African cashiers provided interesting insights on this matter. Glover, Pallais & Pariente (2017) discovered that African cashiers supervised by managers biased against minorities performed more poorly. Biased managers did not treat the minority differently but simply interacted less with the cashiers, being worried to be arraigned of discrimination if they made improper comments during their interactions. Such behavior decreased the effort of African employees. Indeed, African cashiers tended to leave work earlier and be absent more often, leading to a decrease in their working time and wages. When they worked instead with non-biased supervisors, they happened to be 9% more productive than non-African employees.

How to overcome such implicit discrimination? Insights from social psychology suggest the beneficial impact of interactions between social groups. In New Delhi many private schools lease advantageously from the government, which in exchange request them to randomly chose poor children to attend the school for free, integrating them in the same class of wealthy children. Such phenomenon was studied by Rao (2013), who discovered that after four years of exposure and regular interaction in cooperative groups the students modified their social preferences and behaviors. Indeed, rich students attending classes with poor classmates volunteered 10% more people (compared to their peers without poor class-mates) to spend time over the weekend in charity activities for disadvantage children. Moreover, such students shared their endowments in dictator games[2] 45% more often.

3.3.2. Self-stereotyping

Another social barrier which influences social exclusion is self-stereotyping or self-censorship. Until now, we have considered stereotypes created by others, but we did not take into account that such metal models can be generated also by the person himself. The stigma of social exclusion may lead individuals to spend a considerable amount of mental resources in assessing 'whether they belong, whether they are wanted, whether they are good enough, whether they are worthy' (Hoff & Walsh, 2017: 22). Moreover, such mental energy is employed in different amounts in disparate situations or social groups, and can make the negative stereotype become a cognitive tax. This of course is

[2] In this kind of game, there is a dictator and a recipient: the first receives an endowment and has to make the decision whether to split it with the recipient. It is used to measure weather an individual acts on the basis of self-interest (Hoff & Walsh, 2017).

dependent on the person's perception of the situation and the importance that he attributes to his social identity (Hoff & Walsh, 2017).

The effects of stereotypes spread in various contexts. For example, the mediocre performance of African American students when tacking aptitude tests has been discovered to be influenced by the initial checking of a box attesting their race (Steele & Aronson, 1995; Steele, 1997). In social identity theory, this phenomenon is also known as 'stereotype threat' and occurs when people experience anxiety about conforming to negative expectations on their particular social group (Muldoon, 2017). Interestingly, the effects of such relationships have been discovered to hold also in extremely privileged context. Shih, Pittinsky and Ambady (1999) carried out an experiment asking to a population of Asian-American female students from Harvard University to solve some mathematics tests. Common stereotypes about Asians and women state that the first are very good at math, while the second tend to perform poorly[3]. The experimenters implicitly activated such social identities making them salient through a pre-test exposure to questions about their residential life at university, their gender identity and their ethnicity. Comparing then test scores to the control group which has not been exposed to such questions, they proved that students conformed to the expected level of performance dictated by the explicitness of such stereotypes. Indeed, students performed worse in the female-identity-salient condition, while they achieved better scores in the Asian-identity-salient condition, with a swing of about 20% of the students' total performance. In a similar way, it has been discovered that students from lower socio-economic backgrounds perform worse when the testing situation is previously presented as a measure of intellectual ability (Croizet &Claire, 1998).

Moreover, countries which present a highly divided social pyramid, such as castes in India, encounter social discrimination more easily. An analysis carried out in China showed the influence of 'hukou' –the household registration system which classifies and offers social privileges to citizens on the basis of their birthplace– on the social identity of school children. Afridi, Li and Ren (2015) tested the effects of making hukou identity public on two groups of children: one coming from the privileged urban Beijing households and the other one from the disadvantaged rural-Beijing ones. The experimental findings revealed that disclosing individuals' hukou status reduced the performance rural-hukou children in solving maze puzzles by 12%.

[3] Stereotype threat is normally recognized as the main explanation for gender-differentiated outcomes in mathematics tests (Spencer, Steele & Quinn, 1999). Nevertheless, the literature shows inconsistencies since some studies demonstrate no evidence between stereotype threat and girls' math performance (Ganley et al., 2013). Potential reasons for such findings include the possibility that the activation of the stereotype may happen only in very specific circumstances.

The psychological consequences created by social stigma may be mitigated with interventions to impress feelings of belonging or to through value-affirmation exercises. An experiment implemented in the US with seventh grade students adopted self-affirmation techniques to improve the school performance of poor Afro-Americans. Students were asked to complete short writing assignments throughout two school years, in which they had to reflect on meaningful personal values and aspirations, such as personal relationships and cultural and artistic competences. At the competition of eighth grade Afro-American students raised significantly their grade point average, in particular low-achieving students who improved their GPA of 0.41 points. Enhancing students' self-perception, pushing them to reflect on self-affirming values, helped to diminish the racial achievement gap between poor Afro-Americans and European American students (Cohen et al., 2009). Similar interventions have been applied in the context of HIV oi AIDS-related stigma. A patient-centered approach which aims to empower the affected person has been discovered to be more effective that many interventions at the institutional level (Heijnders &Van Der Meij, 2006).

3.1.3. Adaptive preferences of the oppressed

The last social barrier which will be discussed is the one created by adaptive preferences. Classical economy assumes that preferences are fixed, however, people tend to adapt to certain unfavorable circumstances, consequently distorting their self-evaluation. Adaptive preferences are adjustments of people's aspirations to attainable opportunities. They can lead a marginalized group to see the exclusion as natural, preventing his exercise of autonomous choice. In numerous cases, existing institutions act as reference points: for example, in many developing countries such as Mali, Niger and Eritrea, women affirm that a man can be justified for hitting his wife when refusing sex. In rural areas of India, the majority of girls end their education to marry and decide to have children at extremely young age. A traditional economic approach would define such decision as the preferred outcome, given their opportunity sets. A behavioral approach looks instead at the lack of imagination of other life opportunities (Hoff & Walsh, 2017).

Policies to overcome the adaptive preferences of the oppressed should focus on exposing the person to role models and alternative experiences, which can broaden prototypes and encourage trust or collective action. Due to the strict relationship between mental models and institutions, often such policy intervention will aim to change institutions directly (World Bank, 2015). An example of a potential role model offered by institutions consist in securing places for women as political leaders. This was indeed the aim of a political program led in West Bengal, India. In India women occupy only an average share of 10% in national states and legislatures. In 1990s, the government intervened

implementing an amendment that saved in one-third of villages the position of *pradhans*, namely the village council leader, to female candidates. Such gender quotas worked successfully and significantly increased the number of women *pradhans*. Only seven years of exposure to such women authority changed men's evaluations of women's leadership positions. Even if men continued to prefer male leadership than female one, the practice of living under the regulation of a woman increased family aspirations for their daughters, and the ambitions of daughters themselves, leading them to attend more years of schools in average. Moreover, even after gender quotas ended in a village, the number of women running for elections doubled, and also the number of women actually obtaining a seat considerably increased (Beaman et al., 2009).

I consider this approach one of the most effective, which is being applied also in other contests. Indeed, just recently the UNHCR, the World Bank and the European Union have sponsored the TEDx Kakuma Camp[4], the first ever TED event organized in a refugee camp, in Kenya. The event has been thought to offer stories that uplift and inspire the life of refugees. The speeches by both international experts and former camp refugees will aim to inspire and empower the community, providing a different lens into the world of refugees.

Mental models can persist even if they have negative consequences on individuals and communities. The evidence provided confirms that implicit discrimination, self-stereotyping and adaptive preferences can be overcome by new policy tools based on the construction of new mental models. Reshaping the schematizing power of the institutions, which generate hierarchies of ascriptive groups by race, gender and ethnicity, produces effective and inclusive policies to mitigate social exclusion.

[4] More details on the event can be found at: http://tedxkakumacamp.org/

3.2. Nudging for gender equality

"Gender equality is more than a goal in itself.
It is a precondition for meeting the challenge of reducing poverty"

Kofi Annan

In a population which share certain mental models, individuals' behavior will inevitably privilege some social norms rather than others. Social norms will then be reinforced because mental models narrow the conception of the world. Such mutually-enforced relationship between mental models and social norms lock in certain sets of behaviors, increasing the salience of a particular beliefs as underestimating women in scholastic, political or working spheres. The previously discussed case of Beaman (2009) provided a clear example of the importance of mental models shift to promote changes in behavior. The introduction of the reservation system in India normalized the idea of political authority and agency of women, weakening those mental models which promoted anti-female social norms and increasing men's willingness to include women in important civic roles.

In this section I will analyze a qualitative study realized by one of the contributors to the World Development Report 2015, Ryan Muldoon, which analyses and suggests policy interventions to modify gender norms in the Kyrgyz Republic. I will then propose some inclusions nudges which can be applied also in developed countries, such as Italy, which is well-known in the European context for its significant gender gap.

3.2.1. Gender norms in developing countries: a qualitative study in the Kyrgyz Republic

After having undergone several constitutional changes and economics shocks after the independence from the Soviet Union, in 2016 Kyrgyzstan showed 25,4% of the population living under the poverty line (Asian Development Bank, 2016) and raked 90 out of 188 in the UN Gender Inequality Index[5] (UNDP, 2016). His social and economic fluctuations have been paired with several shifts in gender norms and social practices.

The qualitative study by Muldoon and Casabonne (2017) explores the causes of women's low civic participation and bride kidnapping, designing for each interested behavior open-ended surveys to test for the presence or absence of gender-oriented norms and mental models. The employment of open-ended questions gave the participants the possibility to use their own words and to evoke responses that present culturally meaningful features. The findings are reported using a behavioral iceberg

[5] The UN Gender Inequality Index measures gender inequalities considering three main aspects of human development: reproductive health, empowerment and economic status (UNDP, 2016).

model (See Figure 6). Such design illustrates patterns of behavior and mental models which build the social support structures which sustaining the observable expressions of gender norms, namely women's civic participation and bride kidnapping.

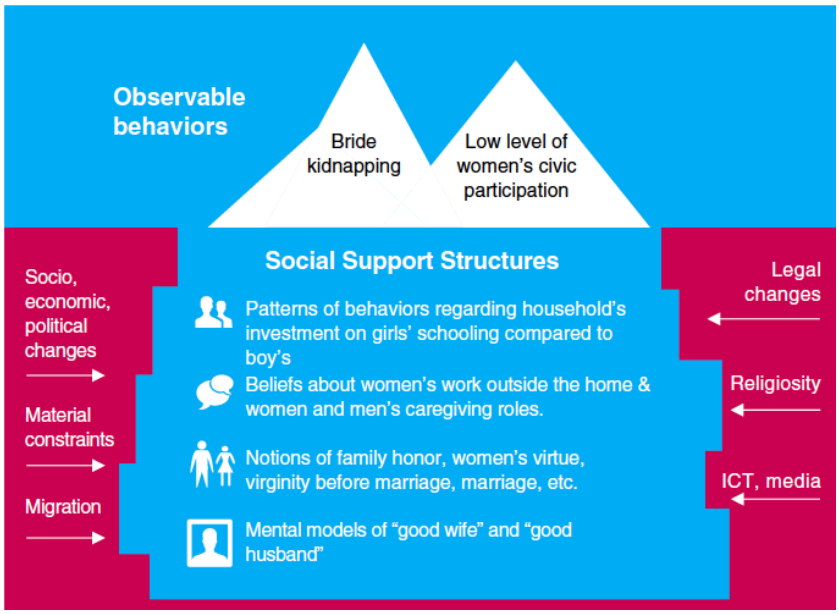


Figure 6: The iceberg model of behaviour adapted to the social structure of Kyrgyzstan

Source: *Muldoon, R., Casabonne, U. 2017. Gender norms in flux : bride kidnapping and women's civic participation in the Kyrgyz Republic (English). Washington, D.C.: World Bank Group.*

Analyzing the response to the surveys, the experts then understood that under the surface of the iceberg there is a wide set of mental models on the roles of men and women. Indeed, women were consistently considered inferior to men, since many respondents affirmed that:

> "[…] *a woman must respect a man, regardless if he is good or bad; he has a higher status. He is one step higher."*
>
> A male respondent, 41 years old, Tokmok city, Chui Oblast
> (Muldoon & Casabonne, 2017: 24)

This mental model of what it means to be a woman shapes the conception of the role women should play in family and civic life. Moreover, gendered conceptions allocate different roles to men and women and to what it means to be a 'good wife' or a 'good husband'. Stereotypes of the good wife stress her duty to remain at home taking care of the children and submitting herself to the rules of the companion. On the contrary, men ought to be the house economic providers and perform political and managerial roles:

> *"I believe that women should not work in managerial positions. They should be ordinary workers. They must make way for men."*
>
> A female respondent, 26 years old, Otuz-Adyr village, Osh Oblast
> (Muldoon & Casabonne, 2017: 26)

Indeed, such mental models related to gender differences define the range of positions available to women, particularly in the workforce. Changes in mental models are correlated to variations in labor-market opportunities, particularly in rural and urban areas. For examples, cities provide numerous work potions which do not imply physical labor, giving women more opportunities to find a job. On the contrary, the lack of opportunities in the rural environment lead women to remain at home. Therefore, cities present a more equality-oriented mental models, disposing a greater number of women in the workforce. However, on the overall, the participation of women in the labor force decreased from 58% to 50% between 1990 and 2017.

Other mental motels which constrain the agency of women are the ones regarding schooling expectations. Girls are often forced to leave school and marry after the completion of the 9th grade, which is the last obligatory school year in the Kyrgyz Republic. Indeed, there is a wide-spread belief that the family will not benefit from the education of the female child since she will soon become part of the husband's household. Boys are conceived as a more profitable long-term investment. Some girls are also sent to Russia to work as nannies, making them to leave school earlier. However, out-migration could have also a positive impact on women's status since it exposes them to Western norms and social values.

All these mechanisms contribute to the rising of bride kidnapping and the lower participation of women in the civic spheres. Bride kidnapping is the practice of marrying a woman against her will, by abducting and raping her. Such act leaves no choice to refuse marriage, since the woman is physically and psychologically coerced to accept, even by the family which would refuse her otherwise. The girls often end up isolated and exposed domestic violence. This remains a diffused practice in the Kyrgyz Republic even if the state in the post-independence period have passed a law to criminalize it. Not only the state seems not to have enough capacity to enforce the law, but citizens also prefer to follow the established social norm rather than the newly introduced legal norm. Indeed, the survey revealed that, while the majority of people generally conceive kidnapping as repugnant, the participants confirmed that the kidnapper can enjoy a general social support.

The low participation of women in the civic sphere is certainly constrained by the patriarchal and religious sharia-law based beliefs which sustain normative expectations for each gender and do not allocate to women political roles in the community:

> *"It is part of our mentality that all public gatherings are attended by men."*
>
> A female respondent, 25 years old, Ak-Jar village, Naryn Oblast
>
> (Muldoon & Casabonne, 2017: 33)

As previously mentioned, the urban context where women work more easily out of the home foster women's confidence and interest to participate in public life. Consequently, labor force participation is an essential booster of civic integration. However, husband frequently opposes the his wife's candidacy due to the fear that she could outstand and humiliate him. This is sustained both by a mental model that women should be less powerful than men and by the perception that civic life is a realm intended only for men, providing a basis against female's civic participation.

Muldoon and Casabonne (2017) propose also a number of behavioral interventions to empower women and make them obtain greater agency. The first proposal covers the introduction of 'edutainment interventions', namely the employment of TV programs which incorporate messages to inspire women and promote their participation in society, as well as discouraging the acceptance of kidnapping. Edutainment interventions can be particularly effective in modelling certain behavior, modifying mental models and gender norms. For example, in the USA the famous reality show '16 and pregnant' has been proved to be the cause of a drastic reduction in teen childbearing (Kearney and Levine, 2014). In Brazil, the emission of TV series which described agentic women possessing few or no children contributed to the decrease of the country's fertility rate, showing a stronger effect in women of lower economic grounds (La Ferrara, Chong, and Duryea 2012).

Other than the employment of mass media to shape behavior, another intervention employed by many organizations[6] consists in the institution of small group structured conversations, gathering young men to discuss different conceptions of their roles as exclusive house providers and promoting daughters' education investment. In a similar way, it would be effective to work together with community leaders to incite girl to denounce their aggressors, convincing them that escaping is not a shame. Community pledges are essential to destigmatize girls, and have been employed successfully in various areas such as genital mutilation[7] and domestic violence.

Overcoming barriers against female political participation would also imply the employment of sensitization campaigns, community outreach activities, and the strict collaboration with media to boost the coverage of spokeswomen promoting gender-sensitive lens. Moreover, the Kyrgyz Republic does not possess a reservation system at the local level, but only at the national one. As the case of Beaman (2009) demonstrated, creating feminine role models through the imposition of a gender quota in local councils could change the perception of politics as a 'realm for men' (Muldoon & Casabonne, 2017).

[6] Interventions to modify boys' genders norms have been employed by associations such as https://promundoglobal.org/ or http://genderjustice.org.za/ .

[7] The most famous example in this contest is surely the 'Saleema Initiative' of UNICEF Sudan (https://www.unicef.org/sudan/protection_6092.html) , in which messages to discourage girls' genital cutting are circulated through both speeches by community ambassadors and multimedia campaign kits.

This qualitative study provides a clear illustration of the working of mental models and their repercussion on human behavior. I think that there I a cyclical and continuously mutual influence between the phenomenon of bandwidth reduction and the limited development of new mental models. Individuals in a population such as the Kyrgyz one, subjected to wide-spread poverty, will present limited cognitive resources to construct new mental models besides the ones provided by their historical institutions. Furthermore, a woman influenced by the social stigma created by mental models will show an even more taxed bandwidth, being absorbed by the preoccupations of maintaining her 'correct' role in society. Poverty reduces bandwidth, impeding the development of new mental models and promoting social exclusion, which will tax even more the bandwidth of an individual.

3.1.2. Promoting the inclusion of women in Italy: a brief proposal

The current situation of Italy on gender equality is giving cause of concern. The 2017 Global Gender Gap Report ranked Italy 82 out of 144 countries, being surpassed by nations such as Ecuador and Mexico. Furthermore, the last Italian Parliament was composed by only 31% of female politicians, confirming the drastic state of gender equality in Italy, one of the lowest of the entire European Union (World Economic Forum, 2017). Moreover, the 2008 economic crisis have severely affected the women, exposing them to poverty. In 2016, ISTAT data reported two and a half million women living in absolute poverty, corresponding to 7,9% of the female population (ISTAT, 2016).

Women in Italy are under-represented in the political, educational and economic sphere. Despite Italy's social-economic position is surely not comparable with Kyrgyzstan, the under-status of women is similarly caused by the diffused presence of gendered norms and mental models. Indeed, the occurrence of automatic associations based on gender stereotypes and prejudices about the limited ability of women to reach political representative roles can shape the aspiration of girls since the early girls of schooling. They may internalize the norms in such a way to exclude themselves certain opportunities. In developed countries such as Italy, you would rarely find a person explicitly declare that women are inferior to men, however implicit bias (as discussed in point 3.1.1) may undermine their role or discourage a certain behavior.

Attention have been driven also on the area financial literacy, since men systematically over-perform women in tests to measure such knowledge. Mental models which could trigger such results may be caused by perspectives that women should be 'financial dependent' or that jobs which require financial skills are inadequate to women. Indeed, the idea that 'boys perform better in math than girls' is diffused since the early years of primary school and influence choices of girls when defining their

High School path or their academic specialization. Even if the country has seen a rise in the girls applying to 'liceo scientifico' (high school focused on applied science), there is still hesitation in choosing professional studies in STEM subjects. This general detachment from mathematical subjects could be the cause of the lower performance of girls in managing monetary concerns. Such mental models will lead the woman to aspire to a less lucrative job, not to bargain their wages or to avoid financial risks and investments (Rinaldi, 2017).
The lack of confidence in their skills caused by the implicit discrimination by others lead young girls to adapt their preferences to a different set of life opportunities. Helping girls to overcome their anxieties in performance requires a commitment both at the local and at the national level. This does not mean only increasing their confidence in mathematical skills, but also in all those other area in which women tend to be under-represented in society, such as politics and managerial roles.

I consider extremely important to expose girls to gender balanced role models, by establishing gender quotas for teachers and academic professors. At all educational levels, teachers represent role models which pupils unconsciously associate to their subjects. Indeed, already during primary school, the presence of mainly male math teachers and mainly female humanities teachers may lead the girls to start building different expectations to which jobs is 'masculine' or 'feminine'. This does not mean increasing the number of women teaching in school, since Italy already shows an extremely high presence of female teachers compared to other countries, but to simply redistribute the teaching of STEM and social science subjects equally between men and women.
Conversely, in the academic sphere only 22% of university professors are women (MIUR, 2016). Which such percentage, Italy obtains the one of the lowest stage in the European Union. This distribution alone of mainly females in primary and secondary school positions and mainly males in academic positions shapes the expectations of girls on their academic achievements. Female students can be biased in conceiving the academic career as a masculine life pathway or being discouraged in choosing an academic specialization represented mainly by male professors. The introduction of gender quotas also in higher education could be the first step to increase students' aspirations and introduce women to a more equal labor market.

Another intervention to rise female students' awareness consist in the arrangement of compulsory courses and training workshops which drive them to reflect on self-affirming values[8] or teach them career skills. This may include also wage negotiation, public-speaking and work-life balance guidelines. Ten universities which adhered to the HeForShe solidarity campaign launched by UN

[8] See for instance Cohen et al., 2009, which has been previously discussed in point 3.1.3.

Women[9] have already introduced such techniques through the organization of classes to address gender inequalities (HeForShe, 2015). However, none of the adhering academic institutions is Italian. Making a first move towards an international commitment is essential to encourage universities to shift the focus on this issue. However, in my opinion, such initiatives should not be limited exclusively to the higher education sphere, since mental models are developed long before this stage of life. It is then essential to build a long-term awareness training which starts since the first educational stage. Such interventions should cover both young boys and girls, since increasing interactions between groups has proven to have beneficial impacts on limiting implicit discrimination (as discussed in point 3.1.1.).

As we have seen previously in the Kirgizstan case, the labor force participation of women is the first step to foster their political participation. A more inclusive education system is essential to establish equally knowledge-based societies, which will then develop a more balanced work-force and political system. Empowering women in developed countries, where mental models are established on the basis of very unintentional associations, is surely not easy. However, the alarming situation of Italy, where equality of opportunity is fully achieved but equality of outcomes is still far behind, should lead us to profoundly reflect of the shaping power of mental models.

[9] See for example SciencesPo's 'Cycle de conferences et ateliers sur l'égalité femmes/hommes', available at: http://carrieres.sciencespo.fr/index.php/fr/article/184/184-fr-cycle-de-conferences-et-ateliers-sur-l-egalite-femmes-hommes?_ga=2.3718640.1953005126.1528467216-1038986060.1526397254. Indeed, SciencesPo has committed for the HeForShe campaign to reach 40% representation of both genders across academic and representative positions by 2020 (HeForShe, 2015).

CONCLUSION – The behavioral challenge

Scientists today continue unperturbably to measure the material challenges of scarcity: how poor people are, how many are unemployed, or which is the current GDP measure. Many efforts have been done to introduce alternative measures of well-being, such as the Human Development Index or the Gross National Happiness Index. However, it has been never thought to introduce also a measure of cognitive resources. When assessing the status of an Indian community, we do not acknowledge how much the population may be taxed on bandwidth. When measuring how much the 2008 recession have modified our economy, we do not consider that it may have had an impact on the individuals' cognitive system. During a recession, many aspects of our life are simultaneously affected: work, saving, social interactions and so on. The recession, rather than exclusive economical, becomes also a cognitive one.

Every circumstance which can lead to a bandwidth reduction will affect the choice we make, the way we think and our perception of new mental models. Even social experts know little about how fluctuating is the bandwidth of society. They may not consider how much it can limit the imagination of alternative life opportunities. A society which is undergoing several cognitive challenges will be more exposed to the risk of being blocked into a limited set of mental models, which will impede social inclusion. Ethnic stereotypes and gender norms are only some of them.

However, behavior change cannot be achieved by shaping one mind at a time. The change in a single person does not suffice to make an entire society inclusive. We can think of our two-systems brain as a rider and his domesticated elephant: the unconscious mind of System 1 is the elephant, while the rider represents the rational thinking of System 2 (Haidt, 2005). Our intuitive and emotional mind, relying on what is most familiar to us, make use unconsciously skeptical to what is different and does not fit the norms. Move the elephant for the rider is extremely arduous. Nevertheless, moving the elephant in a single person, through behavioral interventions in savings decisions or health and educational investments, as we have seen previously, seems feasible. Moving the elephants of an entire society when it comes to social inclusion is even more challenging.

Identifying metrics of the cognitive dimension of poverty and social exclusion remains a new area of research. Nonetheless, evidence supporting this assumption is growing together with new policy proposals. Looking at the familiar in a new light is neither easy nor immediate, but if policymakers want to realize their programs successfully, they cannot ignore the proven impact of the behavioral revolution.

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RIASSUNTO IN LINGUA ITALIANA

La mente umana agisce in modo differente quando fa esperienza della mancanza di qualcosa. Le circostanze della povertà, ovvero la rappresentazione più significativa di scarsità, riducono notevolmente le risorse cognitive impiegate dagli individui nei processi decisionali. Questa tesi intende sottolineare come una comprensione psicologica dell'economia possa fornire un contributo essenziale nell'identificare le inefficienze strutturali delle politiche per promuovere lo sviluppo e l'inclusione sociale, proponendo poi una serie di possibili interventi comportamentali.

LA STRUTTURA MENTALE DELLA POVERTÀ

La scarsità: un vasto concetto

Il concetto di scarsità è estremamente ampio ma dimostra una sostanziale correlazione comportamentale tra situazioni che all'apparenza possono sembrare molto diverse: la mancanza di tempo, la carenza di denaro, la riduzione del cibo o la limitazione dei contatti sociali. Infatti, per capire l'idea di scarsità bisogna andare oltre alle pure limitazioni materiali che essa comporta e iniziare a concepirla anche come uno stato mentale. Uno stato psicologico di scarsità porta allo sviluppo di una diversa attitudine della persona nei processi decisionali, poiché, essendo essa un problema che riserva la nostra attenzione, cattura gran parte delle nostre risorse cognitive. In particolare, essa produce due effetti inversi: dal lato positivo, essa ci spinge a concentrarci di più sulle nostre necessità impellenti, rendendoci più efficienti. Dal lato negativo però, mentre ci concentriamo sui nostri bisogni ingenti, tenderemo poi a trascurarne altri. Costi e benefici della scarsità possono dunque essere sintetizzati nei fenomeni di 'focusing' (focalizzazione), 'tunneling' (effetto tunnel) e la riduzione della 'bandwidth' (larghezza di banda) mentale.

La focalizzazione

Per quanto riguarda la focalizzazione, ognuno di noi ha fatto esperienza di situazioni nelle quali delle scadenze ingenti spingono ad agire più efficientemente. Numerosi studi psicologici si sono concentrati su questo fenomeno. Per esempio, l'osservazione del comportamento psicologico nelle riunioni aziendali ha rivelato che, mentre il tempo iniziale è tendenzialmente dedicato alla discussione di dettagli irrilevanti, a metà del meeting, realizzando di avere ora poco tempo disponibile, i partecipanti sono soggetti ad una 'correzione intermedia' nella quale migliorano la loro produttività per raggiungere il risultato desiderato nei tempi limitati.

L'effetto tunnel

Concepito nei termini precedenti, il concetto di scarsità sembra avere una connotazione positiva. Tuttavia, la percezione di scarsità non solo spinge alla focalizzazione, ma anche ad adottare una 'visione a tunnel', ovvero ad inibire altri oggettivi bisogni. Il termine deriva dal fenomeno oculistico

che porta la persona a concentrarsi sugli obbiettivi situati al centro della retina dell'occhio, ignorando le informazioni più periferiche. In psicologia esso risulta parte integrante del fenomeno di 'inibizione dell'obbiettivo', ovvero della capacità della mente umana di ignorare bisogni diversi da quelli immediati.

La riduzione della 'larghezza di banda' mentale

Possiamo quindi dedurre che ogni contesto di carenza ha un impatto diretto sulle nostre risorse mentali, causando un vero e proprio danno cognitivo. Sendhil Mullainathan, professore di economia all'università di Harvard, ha definito questo fenomeno come una riduzione della 'larghezza di banda' mentale di un individuo. Essa è descritta come una misura di concentrazione, attenzione, capacità computazionale e abilità di mantenere autocontrollo e programmare a lungo termine. Per misurarla vengono impiegati due determinanti principali dei funzionamenti mentali umani, ovvero l'intelligenza fluida (attraverso l'impiego delle Matrici di Raven) e il controllo esecutivo (misurato attraverso diversi tipi di test che determinano la capacità di gestire gli impulsi). Ciò rende questo concetto misurabile e ricreabile in laboratorio.

La relazione tra povertà e mente

La povertà nel mondo: andando oltre alla soglia di povertà

La povertà–in quanto scarsità cronica di denaro–è sicuramente la più significativa manifestazione di scarsità al mondo. Inoltre, è fungibile con altre forme di scarsità, come la malnutrizione e l'esclusione sociale. I dati più recenti della Banca Mondiale stimano che il 10% dell'attuale popolazione mondiale vive sotto la soglia di povertà. Tuttavia, è importante ricordare che la essa non affligge solo le nazioni in via di sviluppo. Negli Stati Uniti, 40.6 milioni di americani vivono in condizioni di povertà estrema secondo le stime dell'United States Census Bureau. Pertanto, si può assumere che la penuria di risorse riduca similarmente le capacità cognitive sia nelle nazioni sviluppate che in quelle in via di sviluppo.

Le conseguenze psicologiche

È spesso un'assunzione comune che il mancato investimento da parte dei poveri in piccoli risparmi, nell'educazione scolastica e nella prevenzione di malattie sia dovuto alla loro mancata comprensione del possibile beneficio. Non viene invece tenuto in considerazione che è il contesto della povertà ad influenzare i processi decisionali dei poveri. Per prima cosa, la povertà può deteriorare le aspirazioni dell'individuo. Infatti, svariati studi dimostrano che gli studenti provenienti da contesti socioeconomici svantaggiati, come ad esempio molti studenti Afro-Americani, esprimono aspirazioni accademiche e lavorative minori rispetto ai loro compagni. Inoltre, nei paesi emergenti l'assenza di infrastrutture facilmente accessibili può imporre ulteriori tasse cognitive.

La povertà consuma la larghezza di banda mentale

Il contesto di povertà tassa dunque inevitabilmente la larghezza di banda di un individuo. Per provare ciò, Mullainathan ed i suoi colleghi hanno effettuato un esperimento su una popolazione di coltivatori

di canna da zucchero in India. La scelta di questi particolari soggetti è stata dettata dal fatto che essi hanno la peculiarità di ricevere il loro reddito solamente una volta all'anno, ovvero al momento del raccolto. Ciò ha permesso di analizzare le performance cognitive della stessa persona quando soggetta a una condizione di scarsità (prima del raccolto) o di abbondanza (dopo il raccolto). Ad ogni coltivatore sono stati somministrati delle Matrici di Raven e dei test di Stroop per misurare l'intelligenza fluida ed il controllo esecutivo. Come previsto, quando i test sono stati effettuati nel periodo di non-scarsità, i soggetti hanno ottenuto risultati migliori, paragonabili a un aumento di 10 punti QI. Questa tassa mentale non deve essere sottostimata in quanto un vasto spettro delle nostre azioni si basa sulla larghezza di banda. Una tale diminuzione delle risorse cognitive causa un'inclinazione a dimenticare, meno produttività, meno capacità di processare nuove informazioni e minore autocontrollo.

POLITICHE COMPORTAMENTALI PER LO SVILUPPO

Design comportamentale per la povertà

I passi verso la rivoluzione comportamentale

L'economia psicologica e comportamentale è in sé una nuova materia, essendo nata negli anni settanta. Dopo la rivoluzionale introduzione del concetto di 'nudge' (spinta gentile) da parte di Thaler e Sunstein (2008) diversi 'Behavioral Insights Teams' stanno iniziando collaborazioni con i governi di tutto il mondo. Dopo la pubblicazione nel 2015 del 'World Development Report on Mind, Society and Behavior', la Banda Mondiale ha introdotto il primo team di esperti esclusivamente dedicato allo studio delle applicazioni dell'economia psicologica e comportamentale nel campo dello sviluppo.

I principi dell'economia comportamentale

Progettare un intervento comportamentale richiede il passaggio attraverso tre differenti stadi: *definizione* dello scopo del problema, *diagnosi* dei 'punti di stress comportamentali', ed infine il *design* di un intervento effettivo basato sui dati precedentemente ottenuti. Quest'ultimo processo applica una serie di principi comportamentali, come:

- l'utilizzo di 'commitment devices' (dispositivi di impegno) per facilitare l'autocontrollo
- la semplificazione delle procedure burocratiche rimuovendo complicazioni nelle scelte attraverso l'impiego delle 'default options' (opzioni predefinite)
- l'impiego di micro-incentivi e di promemoria per diminuire la disattenzione
- la considerazione delle norme sociali e degli schemi mentali che influenzano le scelte

L'autocontrollo e l'attenzione limitata

I più significativi 'punti di stress comportamentali' che influenzano le scelte decisionali in contesti di povertà sono la riduzione dell'attenzione e la carenza di autocontrollo. Quest'ultimo in particolare è

causato da un fenomeno psicologico conosciuto come 'present bias' o 'hyperbolic discounting', ovvero una preferenza temporale inconsistente che tende a dare maggior peso alle gratificazioni immediate rispetto a quelle future. Questi errori cognitivi portano ad effettuare scelte non ottimali in svariati campi.

'Nudging' per risparmiare

Uno dei campi dove l'economia comportamentale ha trovato applicazioni particolarmente efficaci è sicuramente quello del risparmio. Un terzo degli americani avente accesso ad un piano di risparmio 401 (k) (piano pensionistico) non vi aderisce. Ciò è attribuito alla complessa formulazione dei moduli di adesione, i quali richiedono l'utilizzo di molte risorse cognitive per essere compilati. Numerosi studi hanno dimostrato che rendere l'adesione al piano l'opzione di default, richiedendo di specificare solo nel caso in cui non si voglia prenderne parte, può raddoppiarne il numero di aderenti. Un altro intervento efficace è stato introdotto da Thaler e Benartzi (2004) attraverso il famoso programma 'Save more Tomorrow', il quale, per contrastare l'avversione al rischio, implicava un aumento automatico della detrazione dei risparmi in concordanza con ogni aumento della paga.

Nei paesi in via di sviluppo come il Kenya, l'attenzione limitata dedicata alle decisioni di risparmio è stata risolta con l'invio di messaggi di promemoria a scadenza mensile e attraverso l'utilizzo di 'committment devices' come ad esempio conti di risparmio bloccati. Il famoso laboratorio di economia comportamentale ideas42 ha inoltre semplificato il modulo di adesione ai piani di risparmio di una banca rurale filippina incrementandone così i risparmi del 37%.

Incentivare gli investimenti medici e scolastici

L'effetto tunnel porta il povero a concentrarsi sulle sfide di ogni giorno, ignorando importanti decisioni nel campo della salute e dell'educazione, le quali potrebbero invece migliorare il suo benessere. Superare la procrastinazione di queste scelte comporta innanzitutto la minimizzazione dei costi di accesso iniziali. In Kenya, la semplice fornitura di uniformi gratuite ha quasi dimezzato l'assenteismo scolastico. Tuttavia, anche quando un servizio è fornito gratuitamente, spesso gli individui non ne traggono i benefici. In India numerosi campi medici forniscono pacchetti di immunizzazione gratuiti. Nonostante ciò, molti genitori non vi portano i figli a causa delle distanze fisiche da affrontare o dalla perdita di tempo che ciò comporterebbe. È stato dimostrato che fornire anche un piccolo incentivo, ovvero mezzo chilo di lenticchie (equivalente a circa metà del salario quotidiano di un agricoltore) può raddoppiare il numero di bambini immunizzati.

Inoltre, in molti contesti in via di sviluppo il pagamento delle rette scolastiche viene richiesto in un'unica soluzione all'inizio dell'anno. Ciò è particolarmente problematico per gli agricoltori che, come citato in precedenza, ricevono i loro ricavi solo dopo il raccolto, periodo che non coincide con il pagamento della retta. Avendo una larghezza di banda mentale limitata in tale momento, spesso decidono di non iscrivere il figlio a scuola. Rimandare i pagamenti a momenti in cui l'individuo è più

ricettivo o provvedere sussidi per sostenere l'educazione può ridurre le pressioni cognitive a cui il povero è soggetto al momento della scelta.

COMBATTERE L'ESCLUSIONE SOCIALE

La povertà è spesso legata a fenomeni di esclusione sociale. Inoltre, il concetto di scarsità dimostra che l'esclusione sociale, in quanto carenza relazionale, può causare ulteriori tassazioni cognitive. Visto che il fenomeno della diminuzione della 'larghezza di banda' non è mai stato utilizzato in questo contesto, questo capitolo sarà basato sulla mia personale assunzione che le risorse cognitive di un determinato gruppo sociale possono essere ulteriormente ristrette dallo sviluppo di stereotipi etnici e di genere dettati da schemi mentali.

La potenza degli schemi mentali

Quando un gruppo sociale è bloccato agli estremi della società anche quando la parità procedurale di opportunità è raggiunta, l'economia classica afferma che il gruppo presenta determinate caratteristiche che gli impediscono la mobilità sociale. L'economia comportamentale sostiene invece che deve essere dedicata più attenzione alle barriere psicologiche che ne impediscono l'inclusione. Un gruppo sociale il quale condivide determinate idee ed esperienze può sviluppare inconsciamente degli schemi mentali che dominano le sue scelte, e che possono acquisire una natura disfunzionale. I modelli mentali alla base del meccanismo di esclusione sociale si basano sullo sviluppo di diverse barriere sociali, di seguito riportate.

La discriminazione implicita

La teoria tradizionale della scelta razionale riconosce principalmente la discriminazione come 'statistica', ovvero basta su informazioni imperfette sulla produttività dell'individuo. Un approccio comportamentale privilegia invece una visione della discriminazione 'implicita', ovvero basata su un'involontaria associazione mentale tra il genere o l'etnia di una persona ed un determinato attributo. Per esempio, a partire dagli anni settanta le orchestre statunitensi hanno deciso rendere le audizioni 'cieche', introducendo un pannello per coprire l'identità del candidato. Questo semplice intervento ha aumentato del 30% il numero di musiciste donne selezionate nelle orchestre.

Gli autostereotipi

Gli schemi mentali alla base della stereotipizzazione non sono solo creati dagli altri, ma anche da dallo stesso individuo. Uno stereotipo può inoltre tassare le risorse cognitive in quanto causa ansia del conformarsi alle aspettazioni negative riguardo al proprio gruppo sociale. Per esempio, si è dimostrato che i minori risultati ottenuti dagli studenti Afro-Americani nei test attitudinali possono essere influenzati dall'iniziale selezione di una casella attestante la loro razza. Ciò può accadere più facilmente in paesi che dimostrano una piramide sociale profondamente divisa, come le caste in India

o il sistema 'hukou' di registrazione dei nuclei famigliari in Cina. Le conseguenze psicologiche causate dalla stigmatizzazione sociale possono essere mitigate attraverso esercizi di auto-affermazione che portano l'individuo a riflettere sui propri obbiettivi ed aspirazioni.

Le preferenze adattive

L'economia classica assume che le preferenze siano fisse, senza tenere in considerazione che gli individui tendono invece ad aggiustare le loro aspirazioni alle opportunità più ottenibili. Ciò è causato da una limitata immaginazione di possibilità di vita alternative, portando così un gruppo marginalizzato a vedere la propria esclusione come naturale. Politiche per risolvere le preferenze adattive devono concentrarsi sull'esposizione del gruppo a modelli di comportamento alternativi. Ad esempio, in West Bengal, a partire dagli anni novanta, è stato introdotto un emendamento che assegnava in un terzo dei villaggi la posizione di *pradhans* (leader del consiglio del villaggio) ad una donna. Sette anni di esposizione della popolazione a questo nuovo modello hanno cambiato le aspirazioni delle famiglie verso le figlie femmine, e le aspirazioni delle figlie stesse, portando un aumento negli anni medi di studio femminile. Inoltre, anche dopo che la quota di genere è stata rimossa, il numero di candidate donne alle elezioni è raddoppiato.

'Nudging' per la parità di genere

Una popolazione che condivide specifici schemi mentali privilegerà inevitabilmente determinate norme sociali, le quali saranno a loro volta rinforzate dagli schemi mentali stessi. Questa relazione reciproca tra schemi mentali e norme sociali incentiva particolari comportamenti, come la sottovalutazione del potenziale femminile in ambito scolastico, politico e lavorativo.

Le norme di genere nei paesi in via di sviluppo: uno studio qualitativo in Kirghizistan

Lo studio qualitativo di Ryan Muldoon – uno dei co-autori del World Development Report 2015 – esplora le cause della bassa partecipazione femminile alle attività civiche del Kirghizistan e del fenomeno del 'rapimento della sposa', ovvero i numerosi sequestri a cui le giovani donne vengono sottoposte per poi venir obbligate a sposarsi contro la propria volontà. È questa una pratica purtroppo riconosciuta lecita dalla società. Lo studio ha rivelato che sotto tali osservabili fenomeni si nascondono strutture sociali di supporto promosse da schemi mentali, ricreando un 'modello comportamentale ad iceberg'. L'analisi delle risposte ai sondaggi ha rivelato che gli uomini vengono ripetutamente classificati come 'uno scalino sopra' alle donne e che quest'ultime sono influenzate da un modello mentale della 'brava moglie' a cui non è permesso dedicarsi ad attività politiche anche a causa di convinzioni patriarcali e religiose. Inoltre, l'educazione delle fanciulle non viene promossa dalla famiglia in quanto vi è la convinzione che quest'ultima non potrà beneficiare di tale investimento, in quando la figlia diventerà presto parte della famiglia del futuro marito.

Interventi che per l'empowerment della donna in Kirghizistan potrebbero comprendere l''edutainment' (intrattenimento educativo) attraverso l'introduzione di programmi televisivi

incorporanti messaggi per nutrire le aspirazioni delle donne e promuovere la loro partecipazione in società. Inoltre, l'introduzione di campagne di sensibilizzazione e di conversazioni strutturate tra piccoli gruppi maschili possono essere utili per discutere concezioni differenti del ruolo dell'uomo come mantenitore esclusivo della famiglia. Similarmente al caso del West Bengal, una quota di genere potrebbe essere introdotta nei villaggi per esporre la popolazione a modelli comportamentali femminili.

Promuovere l'inclusione femminile in Italia: una breve proposta

La situazione contemporanea della donna in Italia è allarmante. Dopo la crisi economica del 2008, le donne tendono anche ad essere più esposte alla povertà. Le donne in Italia sono sottorappresentate nella sfera politica, economica e sociale, e ciò è causato dalla presenza di norme di genere.

Per esempio, è estato verificato che le donne mostrano prestazioni inferiori nei testi di alfabetizzazione finanziaria (financial literacy) rispetto agli uomini. Schemi mentali che causano questo risultato sono legati all'idea che la donna abbia maggiori difficoltà nella gestione del denaro e che possa essere finanziariamente dipendente dall'uomo. Inoltre, la diffusa convinzione che i ragazzi siano in grado di ottenere risultati migliori delle ragazze nel campo della matematica e in generale delle materie STEM può portare la donna a mancare di fiducia nelle proprie capacità e aspirare ad un lavoro meno remunerativo degli uomini.

Possibili soluzioni potrebbero includere l'esposizione delle ragazze a modelli di genere alternativi, ridistribuendo ad esempio l'insegnamento delle materie scientifiche e umanistiche equamente tra insegnati donne e uomini. A livello accademico ciò è particolarmente necessario in quanto le donne rappresentano solamente il 22% dei professori universitari, facendo così percepire la carriera accademica come un reame destinato agli uomini. Si potrebbero inoltre introdurre corsi e workshop obbligatori che portino le ragazze a riflettere sui proprio obbiettivi e che le introducano a career skills come la negoziazione del salario ed il public speaking. Molte università aderenti alla campagna HeForShe di UN Women hanno già introdotto iniziative simili, ma nessuna delle istituzioni aderenti è italiana. Un sistema educativo più inclusivo è essenziale per stabilire una forza lavoro bilanciata tra i sessi e di conseguenza una società ed un sistema politico più equi.

CONCLUSIONI – La sfida comportamentale

Identificare misure della dimensione cognitiva della povertà e dell'esclusione sociale rimane una nuova area di ricerca. Nondimeno, le prove a supporto di questa ipotesi stanno crescendo insieme a nuove proposte politiche. Riuscire a concepire ciò che è familiare in una luce nuova non è né semplice né immediato, ma se i policymakers vogliono realizzare con successo i loro programmi, non possono ignorare il comprovato impatto della rivoluzione comportamentale.