

Chapter 4

**Can Economic Psychology and Behavioural Economics
Help Improve Financial Education?**

by

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This chapter starts by noting that the provision of knowledge and information in itself is not sufficient; the information must be incorporated into daily life. It then goes on to describe an innovative solution developed for Brazilian school children. The approach combines information and recommendations about personal financial issues with information about the way in which psychological factors may both help and hinder behaviour. This psychological guidance is intended to raise the pupil's awareness of their own traits and trigger discussions about the typical psychological factors that influence financial decision making.

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1. Education, mind and behaviour – Where we stand

Financial education deals with information – and learning. It is undeniably essential to help citizens of any country to better manage their financial life and hopefully make favourable choices that will contribute to increasing their well-being too.

At the same time, it aims to changing behaviour in the sense that information on financial issues ought to be incorporated into daily life if we mean financial education to be effective. And this is where we run into typical difficulties: how can technical information become usable and make an actual difference in terms of new styles of financial organising regarding the life of individuals, groups and whole populations?

Some of the problems may be listed as:

1. Trouble processing information – data is routinely distorted while being transmitted, whether in large or small scale, socially or individually, and it is not easy to promptly identify the way they have been altered, which may lead to strategies rendered useless, money being wasted, people losing motivation and giving up, financial problems persisting; and this whole scenario may go unnoticed by policy makers and population alike; at the end, there may be a feeling of “job done” on the part of the former, and another of insufficiency among the latter, often experienced as failure to avoid common mistakes and to be able to make the most favourable choices (Tversky & Kahneman, 1974; Simon, 1978; Kahneman and Tversky, 1979; Earl et al., 2007).
2. Human mental operations are anchored on deeper and more primitive emotional factors, and are never totally free of such influence – emotions either allow for higher functions (related to thinking) to be achieved or not, and in all cases lend affective dimensions to every area of the mind; again this may take place unbeknownst to the person or community, but it will certainly impact all processes, including those related to education and information, and certainly any change of behaviour; if not addressed, it may hinder all efforts to develop financial capability (Freud, 1911, 1915; Bion, 1961; Klein, 1963; Ferreira, 2007c; Finucane et al., 2000; Loewenstein et al., 2001; Slovic, 2002).
3. Different mental systems – although our motivations seem to always converge towards the same direction, namely reduce internal tension, whether removing unpleasant stimuli, or finding gratification for demands felt, the ways to accomplish this goal can be quite distinct, and this will have major implications for decisions, behaviour – and policy-making; *System 1* is the most prevailing and involves fast and almost instinctive unconscious operations performed without really thinking, based on association instead, in an automatic effortless and non-controlled way, using primitive ancient brain areas – they can be useful for quick selecting (on simple basis of pain and pleasure criteria, and highly susceptible to illusions) and basic surviving, but since it does not involve reflection, there is no real learning, just training at most; the other one, *System 2*, has been more recently developed in humankind, and involves reasoning, language and reflection; it is conscious, more deliberate, and slower, since it requires effort, going well with control, logic, rules, temporal dimensions and the possibility of learning (Kahneman, 2002; Slovic, 2002; Thaler & Sunstein, 2008; Freud, 1911).
4. Hot and cold selves – a great number of our attitude and behaviour inconsistencies can also be explained by the simultaneous existence of different *selves* in our personality, particularly a *hot* one, that only sees the short term horizon, wishes to be immediately gratified or have

any threat of frustration dismissed, and disregards consequences; and another one, the *cold* state, that is able to ponder and think more carefully, integrating both present and future scenarios (plus past data as well), and always intends to do what seems to be really best for oneself, considering the long range as well; the trouble lies on the fact that the latter, also called the *planner*, is usually not the one that actually behaves and makes choices when the time comes – this is up to the “hot” *doer*, with his customary myopia that will make him/her lean towards anything that promises instant relief, while previous sensible plans carefully made by the planner may be entirely forgotten and overcome by present urges – and it should be noted that the hot self is permanently dipped into what are felt to be present urges (Thaler & Sunstein, 2008; Freud, 1911; Klein, 1963); this approach can relate to the previous *Systems 1* and *2*, respectively.

5. Planning and excessive optimism – also as a result of the issues above (*Systems 1* and *2*, hot and cold selves), it is common to find gross miscalculations involving future plans, that seldom come out as initially devised; budgets and financial planning are routinely victims of this typical tendency to overestimate resources and underestimate difficulties and risks; moreover this attitude is rather resistant to change and it is usually hard to learn from this kind of experience, which increases the chance to repeat it each time (Kahneman, 2007; Thaler & Sunstein, 2008; Ariely, 2008).
6. Cognitive dissonance – this phenomenon, originally described by Festinger, in 1957, may be found at the root of most mental distortions (cf. ahead “heuristics”) and can be described as the uncomfortable perception of contradictions within oneself, that leads the person to attempt to reduce this distress, even if it implies non-constructive behaviour (f.i., suppressing the awareness of risk while engaging in activities that do involve it, when the attraction towards desired benefits is felt to be stronger, as we may see in several kinds of investments, financial crisis, and swindler stories alike) (Shiller, 2000; Thaler & Sunstein, 2008).
7. Group behaviour – some psychological operations become more prevalent among groups (usually, the more primitive ones, such as the tendency to act according to herd behaviour, f.i.), while others turn dimmer (those that involve more rational thinking, waiting, pondering etc.), which means that the group dimension ought to be accurately considered as far as policy-making goes, since individual behaviour can be quite different from group behaviour, and humans live in groups most of the time (Akerlof & Shiller, 2009; Shiller, 2000; Freud, 1921; Bion, 1970, 1975).
8. Reality is perceived in different ways by individuals, groups and cultures, and this perception may also vary within them at different moments, all of which will have implications in their reacting to stimuli, grasping and decoding data, and making choices (Lea et al., 1987).
9. It is common to justify choices using apparently rational arguments, even though true motivation may be far from that; besides, the person can be altogether unaware of her motivation – and still be able to offer long explanations for it all the same (Bion, 1970).
10. In summary, we are all subject to both cognitive and emotional limitations regarding perception, memory and judgment of data, resort to mental shortcuts (*heuristics*) in an attempt to deal with complexity that may lie above our competence and as a result, display several systematic errors while trying to make choices, which often turn out to be inconsistent. Some authors will go as far to say that we are more similar to Homer Simpson, the character from the cartoons, than to the model of homo-oeconomicus that traditional economics assigns to us (Thaler & Sunstein, 2008).

Since financial management often implies choices over alternatives amidst a scenario of growing complexity, including some that may take place only once or seldom in a lifetime (e.g. retiring, buying a home, having children), it is not a simple job to try and get them always right (Van Raaij et al., 2007). Lack of information is certainly a major problem, but even when it is available, dealing with technical details is of no less importance – particularly when decision-makers can stumble over so many shortcomings, including those of psychological nature.

The areas lying in the intersection between psychology and economics, namely economic psychology and behavioural economics, have been researching the issues around *bounded* rationality – as opposed to rationality that optimises choices, as conceived by mainstream economics – for many decades now and may offer some insight on how to address them, thus becoming a relevant ally to financial education initiatives.

2. Economic psychology or behavioural economics – Is there a difference?

Both economic psychology and behavioural economics study the same subject: economic behaviour and decision-making, and may be seen as practically the same discipline. Economic psychology dates back to 1881, when Gabriel Tarde, a French jurist and social thinker first used the expression to indicate the need for economics to expand so as to include psychological perspectives into their explanations of economic behaviour. Later on, in 1902, he also published a book titled *La Psychologie Economique* (Wärneryd, 2008). Around the same time, another social thinker, Thorstein Veblen, of Norwegian origin but living in the US, also discussed and published criticism towards the narrowness of the conventional economic outlook, but his efforts did not find a warm welcome among the academic community. It was during World War II that a researcher who had training both in psychology and economics, George Katona, Hungarian emigrated to the US, made the first large surveys on the *Consumer Sentiment Index*, that wound up surprising policy makers and the economic community alike. Contrary to the current economists' view that predicted another recession for the US after the war, Katona and his team pointed to a coming boom, which did indeed take place over the following years. This is considered to be the beginning of contemporary economic psychology, and his book *Psychological Economics* (1975) a landmark for it. It is also worth noting that in 1978 Herbert Simon, trained in economics, psychology, business and artificial intelligence, won the Nobel Prize of Economics for his bounded rationality theory. However, the *zeitgeist* at the time, crowning rationality and expected utility theory as absolute rulers, did not seem to be quite favourable to this type of questioning and resonance was only moderate (Ferreira, 2007a, 2008).

Around the same time, however, two social psychologists, Amos Tversky and Daniel Kahneman, were running experiments and identifying a great number of systematic errors related to the use of shortcuts, *heuristics*, for judging data in decision-making. In 1980, an economist who did not accept mainstream assumptions in traditional economics, Richard Thaler, also began to publish articles that debated actual economic behaviour, as opposed to what was expected – and taken for granted – by orthodox economics. A few other economists shared these views, and this is considered to be the beginning of behavioural economics. Another behavioural economist, Peter Earl, describes the field as follows:

Behavioural economics draws upon fieldwork, experiments and research in disciplines such as psychology for building blocks to construct economic analysis that is more descriptively realistic and both augments and qualifies traditional economics as a tool for designing policy. (...) Whereas economists traditionally have seen choice as an optimising activity subject to given preferences and a well-defined budget constraint, behavioural economics sees everyday life as a process in which humans with limited cognitive capacity try to cope with both information overload and the absence of relevant information and knowledge by

evolving targets for what seems feasible and systems of rules for trying to find ways of meeting these targets. (Earl, 2005, p.1)

Further into this dialog between economics and psychology, in 2002, Amos Tversky had deceased, so Daniel Kahneman alone became the first psychologist to win the Nobel Prize in economics, for their work together on heuristics, biases and the prospect theory, based on experiments, which countered the expected utility theory, stating that our choices are not always consistent. This is probably the most important research line in the field to date, and it also supports the arguments in the present discussion.

To summarise, the discipline originally discussed how the economic science could be expanded, helped mainly by psychology and sociology. Later on, it gained a bounded rationality perspective, with Simon's theory, regarding mental processing of data, and having, as one important unfolding, the idea that decisions could be at most *satisficing*, but never optimal, going against the mainstream economic view on economic behaviour. Due to our computing and resource limitations, Simon defines bounded rationality as "*the need to search for decision alternatives, the replacement of optimisation by targets and satisficing goals, and mechanisms of learning and adaptation*" (1978, p.366), explaining that "*decision makers can satisfice either by finding optimum solutions for a simplified world, or by finding satisfactory solutions for a more realistic world.*" (p.345).

As a result of this view, the investigation of systematic errors followed, derived from experiments that tested heuristics and biases (cf. a comprehensive list of heuristics at the next section). More recently, however, research in the area has been focusing emotions and their powerful influence over behaviour and attitudes, particularly troubles concerning lack of self control and failure to reflect upon relevant issues, consequently incurring on mistakes and economic and financial vicious circles (f.i., Loewenstein, 2006; Lerner et al., 2005; Shiv et al., 2005; Loewenstein et al., 2001; Finucane et al., 2000; Ferreira, 2007c). This has been supported by studies undertaken by neuroscience as well, that have provided evidence for the prominent role of emotions in human mental functioning using brain scanning techniques to map decision-making neurological circuits. And finally – the answer to the question at the title of this section is "no", there is no difference today between economic psychology and behavioural economics.

3. A List of Heuristics by Peter Earl¹

The respected behavioural economist Peter Earl, who has been a professor on both Australian and New Zealander universities, prepared a paper for New Zealand government in 2005, where he summarises the main heuristics that may be encountered within decision-making, cataloguing them according to the step of the process where they tend to occur. his list is reproduced below:

Heuristics and biases in acquiring information

- Availability bias — judgment is affected by the ease of recall of examples/frequency with which events are publicised rather than being proportionate to frequency of occurrence.
- Selective perception — people tend to see what they expect to see, downplay counter-examples and seek verification for their expectations rather than looking for anomalies.
- Concrete information dominates over abstract, statistical information.
- The use of frequency, not relative frequency, to judge the strength of predictive relationships.

- Illusory correlation — people often select inappropriate variables as supposed causes of particular phenomena.
- The focus of decision makers depends on how data are presented — for example, quantitative data may inhibit concentration on qualitative data, or vice versa; which items of information are absorbed may depend on their places in a sequence of pieces of information, while seemingly logical displays of data may distract people from crucial data that are missing, and so on.
- Framing effects — for example, how inclined a person is to search to save money on a product may depend on the proportionate saving that he or she thinks it might be possible to achieve, rather than the absolute amount, even though a 1 % saving on, say, a \$10 000 car is more than a 10 % saving on a \$500 in-car entertainment system.

Heuristics and biases in processing information

- Tendencies to treat small probabilities as zero probabilities and large probabilities as certainties, or to avoid thinking in terms of a range of possible outcomes and instead focus only a single “best guess”.
- Poor understanding of compound probabilities.
- Tendencies to fail to use a consistent judgmental strategy over repeated cases.
- Law of *small* numbers — giving too much weight to small sample results.
- Tendencies to discount the future hyperbolically, not exponentially, which can make people prone problems of addiction.
- Superficial evaluation in the face of complexity/emotional stress, resulting in impulsive choices.
- Social pressures tend to cause judgments to be distorted in favour of the majority view, however ill-founded it might be (as in the story of The Emperor’s New Clothes).

Heuristics and biases in choice

- Sunk cost bias — as where a person consumes something (say, the facilities of a fitness club) because they have already spent money enabling them to do so; their continued consumption of it is a way of making their expenditure seem justified, even though, if they could “turn the clock back”, they would not consume it even if it were available without any charge.
- Endowment effect — how much a person will require to give up something they already have tends to be more than what they would have been willing to pay to acquire it in the first place.
- Illusion of control — the very act of making a choice can make people feel less worried about uncertainties that they earlier perceived.

- Wishful thinking — to make a choice seem appropriate when it is being taken for reasons that they are reluctant or unable to admit to themselves or others, people tend to inflate their estimates of its payoffs in other dimensions.
- Those who are aware of their fallibility as decision makers tend to pursue self control strategies to prevent themselves from being led into temptation, even though they know that these strategies promise them less than they would be able to achieve if they chose alternative strategies that depended on them being able to control themselves. (For example, some consumers voluntarily open Christmas Club Savings Accounts that offer miserly rates of interest but have the advantage of being impossible to access for withdrawals until Christmas approaches.)

Post-choice heuristics and biases

- “Gambler’s fallacy” — after observing a run of one kind of outcome, people begin to assume odds of its rival happening are increasing.
- Attribution bias — people tend to see success as due to their own skill, but failure as due to “bad luck”.
- Mental recall problems, which cause erroneous reconstructions of what happened and affect subsequent choices.
- Hindsight bias — people tend to be able to find plausible explanations for things that in prospect would have been surprising to them.

All these heuristics and their resulting biases will certainly disturb adequate decision-making inducing to systematic errors – most people make them, most of the time –, and for this reason ought to be addressed by financial education programmes.

4. Financial education and economic psychology – A promising dialogue

With knowledge of this kind in hand and properly adapted to the intended target population, financial education programmes can benefit from reaching further into all mental systems, that is, 1 and 2, thus increasing chances for real change in behaviour and consequently more beneficial choices. Since programmes must address the automatic mental system if they mean to actually change behaviour, conveying technical information alone rarely gets to the point in this respect.

It is worth noting that although economic psychology and consumer psychology share the same subject – studies on economic behaviour and decision-making – we consider the former to have almost the opposite vocation when compared to the latter. In our view, economic psychology and behavioural economics should help citizens to become more aware of their own psychological operations while consuming, planning, investing, i.e. making choices, rather than inform manufacturers or advertisers who may take advantage of their already identified vulnerabilities in these processes. Therefore, economic psychology would have much in common with financial education programmes that have a similar goal of trying to help citizens to improve their economic and financial decisions.

Brazil has taken some initial steps towards this goal with ENEF-Estratégia Nacional de Educação Financeira, the proposal for a financial education programme launched by federal government and coordinated by Brazilian Central Bank, CVM, our equivalent to SEC-Securities and Exchange

Commission, PREVIC (formerly SPC), the Private Pension Plans Secretary, and SUSEP, Superintendence of Private Insurance, along with the Ministries of Education and of Justice, school systems representatives and several non-government organisations. In its pilot version it is initially directed to high school students, who shall receive a book (BRASIL COREMEC, 2010) designed to be used by teachers of any subject, since contents are displayed in accessible format, both visually and content-wise.

In action – the Brazilian programme

ENEF material was prepared by specialists on education, along with consultants for finance, communication and economic psychology (the latter, Vera R.M. Ferreira). It addresses daily life situations, involving the financial aspects of family and social life, personal belongings, work, entrepreneurship, projects, public goods, national and international economics, over different time spans (short, medium and long term). There are seventy-two *learning opportunities*, that comprehend items such as: a recap of what is actually done in that situation by the student at that point, another one to check what has been discussed, potential adaptations to regional differences, social and environmental responsibility, possibilities of disseminating this knowledge, autonomous decision-making, that intends to translate the notions into individual and context use, besides the economic psychological *blinkers*.

These blinkers, in the shape of red boxes highlighted in the book, convey practical economic psychological notions that can be used in daily life, such as mental accounting, inter-temporal choice with hyperbolic discounting, anchoring, framing, impulsive buying, credit use, the role of illusions, affective forecasting related to consumption, marketing traps and other psychological factors present in economic and financial decision-making.

Based on the assumption that technical information on finance is not enough to actually change behaviour, due to factors such as our above mentioned bounded rationality and vastly documented anomalies and inconsistencies in economic behaviour, biases in perception, memory and judgement of data, plus the influence of emotions on decision-making, these contributions, originated in research on economic psychology, have been included. Their goal is to raise awareness, offer favourable conditions to the appearance of insights both over systematic errors and strategies to better deal with them, and to trigger discussions on the psychology of economic decisions (Ferreira, 2007b, 2008; Ferreira & Lima, 2009).

The programme is initially dedicated to high school students, and later on it is intended to reach elementary schools as well. Teachers will be trained at first, and they are expected to work at least in pairs in each school. The pilot version of the programme is starting June 2010, when over two hundred schools in four different states will use the material. These will be evaluated in contrast to an equivalent number of other schools that shall be part of the control group. This thorough evaluation, due to be finished in 2011, will also verify the psychological impact of the programme, in which may be a rare opportunity to be able to measure this kind of result in this size of scale. To our knowledge, this is the first financial education national programme to include economic psychology/behavioural economics to this extent.

Here are some examples taken from the book (BRASIL COREMEC, 2010):

1. In the “daily family life” section, while discussing about budget, writing down expenses, and saving, the blinker says:

Another common mistake is not to have control over the money saved. To avoid spending on other things the money you have saved when you did not have that snack, what about putting it away in an envelope where you can write down the name of your goal – “new sneakers”? This is a good technique because when we name the money, we respect more what we intend to do with it. It is important to have discipline and patience, sticking to our goal. Otherwise, we may forget why we have been saving money, and decide to spend it on impulse, thus jeopardising our planning. We can decide to change our project at any time and spend the money we had been saving, but should beware of what we are doing. (p.19)

2. In the same section, but on credit:

Remember that everything in life is finite... Not only money, but time, efforts, energy, health, and even life itself! This is why making these choices is unavoidable – there is no way you can have it all, all the time. At such moments, lowering your expectations might be the smart thing to do! It is not about being mediocre, but rather stopping tormenting yourself over impossible unfeasible goals, while you concentrate your energy on what you can actually achieve. (p.29)

3. In the “social life” section, on consuming:

Sometimes we wonder whether spending money on something is important or not. Do we really need that? How can we decide about it? Here is one hint: don’t buy it immediately, but rather allow yourself a brief interval, count up to 100, leave the store, or wait to purchase it the next day. This really works. If it was not important, but rather guided by impulse, using these strategies pushes the impulse aside and in general we will not buy something when we really did not need it. (p.69)

4. In the same section, on credit:

The use of cards or checks stimulates further spending, more than we would had we been using cash – this has already been confirmed by several studies. It seems that watching the money actually leaving the wallet is felt to be more “painful”, while using credit or debt cards seem painless. The same goes for filling a check. After all, away from the eyes... (p.83)

5. In the section “personal belongings”, on the perspective of buying a computer:

You are not forced to always try and get as much money as possible. The cost of a choice is not always measured by money. Happiness, well-being and health may be more important too. Don’t forget that happiness implies sacrifices and giving up as well, so be careful when you exchange a greater happiness later on for a little immediate satisfaction. Just be aware of the costs involved and decide what is best for you in each situation, calculating well the cost of your decisions. (p.116)

6. In the same section, on consuming with responsibility, some brief explanations on psychological “traps” are added, f.i. about:

a. *Focalism – when I imagine, NOW, what I will be feeling when I actually have the product, I am dedicating all my attention to this subject, therefore I will suppose that I will be very happy, or not, when I do buy it. However, if I wind up buying it, that is going to happen in another moment, when I will have other concerns and feelings in mind, and there is no guarantee that I will feel the same as I had previously supposed I would. That is, focus changes.*

b. *Difference between the “hot self” and the “cold self” – when I am burning with the desire to have an object (we can sweat, get anxious and may not even know the reason for it very clearly), I lend this object the power to make me the happiest person in the world, the most powerful and beautiful etc. “I’ll be amazing when I wear this shirt”, “This mobile is more than perfect”, and so on. Later on, though, when I really purchase it, I realise that nothing has changed, I am still the same person and all. “Oh boy, that wasn’t all the success that I had anticipated.” It is similar to going grocery shopping when one is hungry (“hot”), or after eating (“cold”). Usually, people who go to the supermarket hungry will buy much more products than those who go in a more serene state. (p.130)*

There are over 20 of such “blinkers” in this volume, that draw attention to issues such as: compulsive and impulsive buying (including notions like the fact that our desires have an unconscious root, and can never be fully satisfied, plus the importance of comparing prices before purchasing); the real meaning of taking credit (it is not like that you have become any richer, since it will have to be paid back later – and with interest, that can be as high as 12% a month, in Brazil!); anchoring (and how we are susceptible to reference values, i.e., this can easily be manipulated by publicity, f.i.); framing (upon the example of prices routinely being displayed as \$xxx,**99**, that induce us to believe it is significantly cheaper than the full price); several on mental accounting (the importance of planning carefully and on real basis, i.e., net rather than gross income, that looks more attractive, since it is higher; the risks of relying on future income and destining it to too many goals, that will prove to be unattainable at the end, along with temptations seen in advertising, all this resulting in possible debt problems; the difference between having bills of higher value and bills of lower value in the wallet, as the latter tend to be spent faster and more carelessly); the power of group pressure upon consuming and, often enough, buying things one does not need; the difference between feasible dreams and unrealistic ones.

There is also a short section on behavioural finance itself, explaining what it is and giving examples of studies, and a quick quiz to help identify what kind of consumer the person is, regarding psychological features.

Most of the information is not generally known by this population (high school students), and possibly neither by their families, so it is expected that these notions will arouse their interest, making them pay closer attention to their own economic behaviour, while also bringing the topic home to discuss among family and friends. These students would thus act as multipliers disseminating this knowledge even further.

Another line of contribution emerges from a recent topic that has been researched and discussed, mainly by behavioural economists, involving *choice architecture*. The Brazilian programme has not incorporated this type of context designing yet, but it is already an important step to have included psychological economic notions in it, thus providing a pioneer perspective to financial education so far. Nevertheless, it is worthwhile discussing this perspective as it may offer instigating insights to financial education.

In debate – choice architecture and policy-making

Choice architecture, also known under different nominations, such as *light paternalism* (Loewenstein & Haisley, 2008), *libertarian paternalism* (Sunstein & Thaler, 2003, Thaler & Sunstein, 2008) or *asymmetric paternalism* (Camerer et al., 2003 *apud* Loewenstein & Haisley, 2008), proposes the design of contexts to make them favourable to induce decision-makers towards better choices (Ferreira & Lima, 2009). Naturally, there may be a debate around what is “better”, and to whom it is

better, but we can also remember that policy-making does involve this issue in a rather irrevocable way as well. So let's first examine their argument.

Thaler and Sunstein (2008) explain that good decisions are made when one has experience, good information and immediate feedback, while bad ones result from lack of experience, too little information and either slow or scarce feedback. In their view, knowledge about human behaviour can be greatly enhanced if we take a close look at how we make systematic mistakes, and in turn, knowing how we think should help to design foolproof contexts.

Considering that people are more often than not trying to make choices and deal with a complex world, far from the ideal conditions to think and examine their options, they usually resort to shortcuts to do it, which may always represent hazards to them as well. They are busy and their attention – another limited resource – must tend to several issues at the same time. These heuristics – or rules of thumb – are supposed to turn the tasks of perceiving and judging simpler and faster, but as we have seen, they also lose accuracy, and routinely lead to biases, some of which may drive one to systematic errors. At the same time, routine and habits, along with our natural tendency to inertia, can be very powerful to dictate (inadequate) behaviour.

There is also a concern over fairness in their proposal: choice architecture and the implementation of *nudges* – subtle clues to push the person towards the option she would like to choose herself, but might get confused midway due to all limitations previously described – would help minimise costs imposed over those who, despite their best intentions, do not succeed making good choices. The idea is “*to see how the world might be made easier, or safer, for the Homers among us (and the Homer lurking somewhere in each of us). If people can rely on their Automatic Systems without getting into terrible trouble, their lives should be easier, better, and longer.*” (Thaler & Sunstein, 2008, p.22). In other words, libertarian paternalism golden rule is to “*offer nudges that are most likely to help and least likely to inflict harm*” (p.72), in order to help less sophisticated people while imposing minimal costs on others.

To them, nudges are necessary when:

1. choices have delayed effects;
2. choices are difficult, infrequent and offer insufficient feedback;
3. the relation between choice and experience is ambiguous.

A few points ought to be made on choice architecture before we go on with its main proposals: it is around, whether we like it or not, whether we are aware of it or not; and it can be either favourable to decision-makers or not, but there is little doubt that it will affect them. Therefore, it is relevant to policy-making to get acquainted with its basic principles, as stated by Thaler and Sunstein (2008, p.83-97):

1. *Defaults* – there is a general tendency to choose the option that offers the least resistance, thus the enormous power of status quo conditions – leave things the way they are, or else choose not to choose – “I’ll take whatever comes...”
 - therefore, it is very important to make sure what kind of default option is offered, since most people will pick it simply because it is the default, without analysing it any closer;

- one common example is subscriptions with automatic renewal, that guarantee high rates of adherence;
 - however, not all default options are best for decision-makers – nevertheless, it will be unavoidable to always have *some* default option when decisions are at stake, so this will have to be carefully considered by policy makers.
2. *Errors* – human beings are far from being foolproof, so designing settings and decision-making contexts should take this into consideration:
- errors can be found in all realms, from forgetting cards at ATM's (after finishing a task, our mind shuts off that function and our attention is directed to other activities), to surgeons operating on wrong limbs, patients forgetting to take their medicine, unnecessary items being purchased etc;
 - design that addresses our shortcomings can help better choices to be made.
3. *Feedback* – this is the best practice to improve performance in almost all areas – we learn when we have information immediately after having done something, when it is fresh in our minds and we have the chance to correct whatever may be necessary:
- once again, well designed systems would inform when some task was performed correctly or not, and even better, warn just before some problem might occur (f.i., just like the warning before the battery in devices go too low, could a similar procedure be adopted by banks, before clients run out of funds? – with an important observation, though: these warnings cannot be too frequent, otherwise we tend to ignore them!; and of course banks would have to be *nudged* in this direction...).
4. *Linking* – or *mapping* – *choice to welfare* – in complex decisions it is not easy to imagine later or collateral effects and other consequences, real benefits etc., so it would be helpful to improve the ability to map choices as fully as possible, thus making the selection of favourable alternatives more likely; this can be done:
- making each option understandable – f.i., transforming numbers into elements used in daily life instead;
 - turning costs that are hard to devise – f.i., the costs of having a credit card, mobile phone, insurance, instalments and other items – into easy to calculate and relate to activities, bringing all fees, taxes, interest etc. together, in order to also make it simpler to compare products; also this kind of information should be displayed clearly in terms of language and format (large enough fonts etc.);
 - another measure is having companies send their clients once a year the complete list of services used by them with all costs involved, so they might be able to properly compare them to competitors and choose what is best for them – this would also encourage people to improve their ability to choose.
5. *Complex choice structuring* – since there are different strategies used to choose (trade-off is used when there are few options, f.i., while other methods, including some that can be misleading and hazardous, may be employed when there is a larger number of them, such as

compensatory strategy, when the high value of one feature makes up for the lower one of another, or selection of priority, cutting off what does not reach these criteria, all trying to simplify the several dimensions involved, sometimes to the point of losing focus), choice architecture ought to be used to structure this process:

- the main point here is to help people to learn how to go about choosing so that later on they may do it on their own with better results.

Social influence is yet another major issue regarding change of behaviour and potential nudges, and it is so important because this is how humans learn – with the others around –, and this is how individuals and society develop. Therefore it ought to be particularly addressed by policy-making. Here are some basic types of social influence:

1. Information – if we believe that many people think or do something, we tend to understand that it would be best for us too;
2. Peer pressure – we tend to display herd behaviour because we do not wish to stand out (or at least not too much), so it is preferred to make mistakes along with other people rather than taking the chance to be right on our own;
3. Famous people can influence the public dramatically, as the latter tend to follow their advice and imitate their behaviour.

This is only an introduction to this discussion. Many other examples could be given – or created. Choice architecture is about human fallibility and it reminds us that offering financial education to the population may not be enough. Policy makers ought to go on debating regulations and other context designing if the aim is to provide decision-makers with better opportunities to make favourable choices (Beshears et al., 2008; Choi et al., 2005). In particular, it might be useful to calculate and compare costs and results, between conventional measures involving education on one hand, and simple devices such as sending reminders over mobile phones about the same issue, on the other, so as to have a more concrete view of the efficacy of each strategy – and continue evaluating both. One example could involve saving: every month, each person from the target population would receive three mobile phone messages reminding her that 1) she had planned to deposit some money in her savings account two days ahead, 2) two days later, that this is the day for actually depositing it, and 3) finally, the one checking whether the deposit was indeed made. Would something like this deliver better results than a formal campaign? These are the type of data that could be empirically found, measured and assessed for more precise policy designing.

Of course it seems that combinations of education and choice architecture would render even better results. One important concern is to actually have people learn and develop more mature attitudes and behaviours, towards goals of autonomy and emancipation. We believe there is potential for further innovations and give one example below.

In the future – an interactive Museum of Economic Psychology to further develop financial education in Brazil and other countries

A museum can be described as a permanent institution focused on general interest and aiming at collecting, keeping, researching and treasuring in different manners items that have cultural value. It is associated to memory, cataloguing and collecting objects or concepts, as is the case with the Brazilian Museu da Língua Portuguesa² (Portuguese Language Museum), or other intangible items, like in the

also Brazilian Museu da Pessoa³ (Museum of the Person), that collects ordinary people's life stories and testimonies in audio and video.

Modern museums currently rely on electronic technology to expand the scope of their collections, making them more accessible to visitors and in many cases, also interactive and in constant dialog with the public.

Economic psychology already has a consistent body of empirical data and solid literature, which allows for organising it in the shape of a modern museum. Such museum would gather information on psychological factors found in economic decisions made by citizens (consumers and investors), and by policy makers, initially as a website and eventually as a concrete physical location. The goal is to inform, raise awareness and engage users in developing tools to improve their decision-making processes, so emphasis would lay on systematic errors and the creation of antidotes to them, with data being displayed as sketches, brief explanations and speeches, in both audio and video forms, among others.

The collection would be permanently increased by users themselves as well as specialists, as they constantly added new information and data, keeping it alive, relevant and updated. Besides working as a tool for psychological-economic orientation for individuals and groups, it is also intended to become an embryo think tank, capable of producing contributions for debates around policymaking, with necessary adaptations so as to be also reproduced in different towns and communities.

The idea for this museum was originally devised at *OECD Brazilian International Conference on Financial Education*, organised by CVM-Comissão de Valores Mobiliários and OECD-Organisation for Economic Co-operation and Development, in December 2009, in Rio de Janeiro, when the Mexican representative (Germán Saldívar Osorio) mentioned that there was an Interactive Museum of Economics in Mexico⁴, that displays objects related to the area at a physical location, along with symposia, educational activities, and online alternatives as well.

Upon hearing him, one of the authors (Ferreira) associated it to the idea of the two Brazilian museums mentioned above, and began to work on the project for this museum that would bring together data from the already extensive research in the psychological-economic area to work as an interactive museum, aiming at building strategies to promote awareness, learning and change of behaviour, particular in the collective dimension and in that of policy-making. Over-indebtedness would be another important issue addressed here (Ferreira, 2008; Lea & Anand, 2007; Wrapson et al., 2007). Emphasis would of course lay on psychological factors, that are essential to any process of transformation, be it individual or social.

In summary, its goals would be to:

1. Protect individuals, groups and organisations from errors due to their own psychological limitations, as well as to appeals coming from frauds and marketing itself, while at the same time offering tools to better manage their economic decisions with responsibility and autonomy.
2. Disseminate warnings on psychological traps present in different aspects of economic behaviour, according to economic-psychological literature, and transmit them in mass scale.
3. Contribute to micro finance initiatives, adding the psychological perspective to the introduction of micro credit, savings, insurance etc. (Ferreira, 2008; Tufano & Schneider, 2008; Monzoni, 2008; Magalhães & Junqueira, 2007; Abramovay et al., 2004).

4. Encourage interactivity, exchange of ideas and experience among users/visitors, specialists and policy makers.
5. Become a think tank in the area, being able to provide content and strategies to reflect, debate and build alternatives to improve economic and financial decision-making, having government and non-government institutions as partners too.

Regarding the collection, that could be displayed using different electronic formats as support, such as text, photos, audio, video, simulators, and games, the museum could offer:

1. Basic notions on economic psychology/behavioural economics, decision-making and systematic errors, with short explanations and practical examples of heuristics and biases, on issues such as credit and debt, saving, investment, insurance, retirement, pension plans, consumption, environment etc.
2. Academic and scientific production.
3. Interviews, testimonies and stories told by users/visitors about economic management of their personal lives or experience with public finance and institutions.
4. “Antidotes” against systematic errors and excessive consumption and spending.
5. Examples of choice architecture.
6. Suggestions for policy-making.
7. Games, music, sketches and plays supporting the contents above.
8. Links for other relevant websites.
9. Research, debates and symposia.
10. The history of the field, comprehending economic psychology, behavioural economics and finance, neuroeconomics.

This project, that may have, among others, a foundation dedicated to research in finance and another one dedicated to consumer protection as possible partners, could also be the starting point for similar initiatives in other communities and countries, and all such museums could integrate a net for further reaching new levels of development and a greater number of visitors.

5. Conclusions

Education, awareness, empowerment, change of behaviour. The goals for financial education programmes are ambitious – and they need to be so if making a difference is intended. On the other hand, however, we have a great number of limitations, many of which seeming to be inherent to human condition. Can the puzzle be solved and financial capability acquired by significant portions of the population?

This is no easy job and perhaps the only way to go about it – and to learn from this experience – is to bring different perspectives and backgrounds together to cooperate and integrate, and closely observe this process so it is possible to correct eventual mistakes early on. One point may be clear

though: if policy-making does not fully take mental functioning and all its unfolding into account, financial education programmes will hardly experience consistent efficacy. Here is one invitation to collaborate. We believe that financial education and economic psychology/behavioural economics have a promising partnership ahead.

Notes

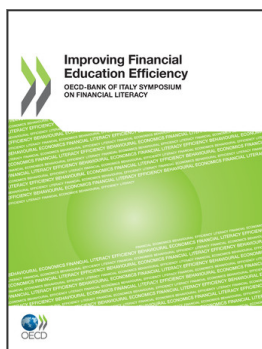
- 1 EARL, Peter E. “Behavioral Economics and the Economics of Regulation”. *Briefing paper* prepared for the New Zealand Ministry of Economic Development, 2005, p.11-12.
- 2 <http://www.museulinguaportuguesa.org.br/museudalinguaportuguesa/index.html>
- 3 <http://museudapessoa.net/>
- 4 <http://www.mide.org.mx/>

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From:
Improving Financial Education Efficiency
OECD-Bank of Italy Symposium on Financial Literacy

Access the complete publication at:
<https://doi.org/10.1787/9789264108219-en>

Please cite this chapter as:

De Mello Ferreira, Vera Rita (2011), "Can Economic Psychology and Behavioural Economics Help Improve Financial Education?", in OECD, *Improving Financial Education Efficiency: OECD-Bank of Italy Symposium on Financial Literacy*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264108219-7-en>

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