

How Singapore Uses Behavioural Economics

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When less is better than more

Some 15 years ago, Switzerland held a referendum about where to put nuclear waste dumps. Researchers went from door to door in two Swiss cantons and asked people if they would accept a dump in their communities. People thought that such dumps might pose a risk to their health or depress the value of their properties. But a surprisingly high 50 percent of those who were asked said they would accept a nuclear waste dump in their communities. People felt responsibility as Swiss citizens.

But when people were asked if they would accept a nuclear waste dump if they were paid a substantial sum each year – equal to about six weeks of the median wage – a remarkable thing happened. Only about 25 percent of the respondents agreed to have the dumps. The offer of cash undermined the motive to be a good citizen.

Similar observations have been made in other settings. When students are paid to go to class, attendance falls. When a fine is imposed on parents who pick up their children late from childcare, more parents turn up late and just pay the fine. It is as if when people are paid to do the right thing, they do less of it.

These findings run smack in the face of conventional economics. Traditional neoclassical economics tells us that individuals are rational. This means they prefer more to less. They respond to incentives. They act in their self-interest. They maximise their utility by making well-informed choices within a budget constraint. These assumptions are intuitive and resonate with the observed ways in which most people make decisions.

Of course, few economists would say that all of us make rational decisions all the time. But as long as most people behave rationally most of the time, the foibles and errors of those who do not, cancel out in aggregate. These assumptions have been repeatedly validated and form the basis of many public policies.

But the exceptions to rational utility maximising behaviour are too numerous to ignore:

- People do not save as much as they themselves think they should.
- People believe in a lucky streak even though the probability of winning in each toss of the dice remains constant.
- People do not opt *out* of default options but do not opt *in* when these same options are presented without default.

The assumptions of neoclassical economics remain a useful tool to understand how people make choices. But there is clearly a need to have a more nuanced understanding of human psychology and behaviour. And it is easy to see why such an understanding is critical for public policy: because all public policies are based on some assumption – explicit or implicit – about how people will respond to these policies. Behavioural economics is an attempt to blend the insights from psychology with the traditional assumptions of economics to yield a richer understanding of how people make decisions.

Insights from behavioural economics

Behavioural economists describe three ways in which the assumptions of neoclassical economics are *bounded* or limited by psychological and cognitive factors.

- First, our rationality is bounded;
- Second, our willpower is bounded;
- Third, our self interest is bounded.

Let me begin with *bounded rationality*. Economic rationality is limited by imperfect information, time constraints, and cognitive biases. Individuals cannot assimilate and analyse all the information necessary to fully maximise their benefits from various courses of action. Instead of optimising, we use various mental models, “rules of thumb”, and other cognitive shortcuts to make decisions. For example, when we choose a home mortgage or health insurance plan, we settle for one that is “good enough” rather than exhaustively search for the optimal plan. Some would say the same approach applies to choosing a spouse, though whether such a thing as an optimal life partner exists is another matter.

Rules of thumb are not entirely undesirable. They reduce the complex tasks of assessing probabilities and predicting gains and losses. They can improve decision-making if their structure is well-adapted to the situation they are being used in.

But some cognitive shortcuts can be misleading, and sometimes even dangerous. For instance:

- *Saliency bias* leads us to assign undue significance to events that occurred recently. Immediately after witnessing a serious car accident, people are likely to believe that road travel is more dangerous than it actually is.

- *Cognitive dissonance* makes us overly confident in firmly-held beliefs, in the face of compelling evidence to the contrary. It is often a good explanation for market manias and financial crises.
 - During the 2000s, when securitisation of sub-prime mortgages surged in the United States, market participants were blind to its risks. Most of them could not contemplate the possibility of a global financial crisis.
 - Closer to home, despite repeated bouts of property market collapses, many Singaporeans seem to believe that property prices can never come down. Or that interest rates can go up.

The second way in which we fall short of the rational utility maximiser of Economics 101 is *bounded willpower*. There is substantial empirical evidence that we often procrastinate, have low self-control, and suffer from inertia, failing to make choices that are in our long-term good. Many people do not exercise as much as they would like to, or find it difficult to quit gambling or smoking even though they want to.

Perhaps the most obvious and economically significant demonstration of bounded willpower is our inability to save enough for the future. There appears to be a universal lack of self-control to reduce current consumption in favour of future consumption. A more extreme version of this lack of self control is manifested not just in too little saving but too much borrowing. At the heart of the macroeconomic problems afflicting many advanced economies today is a high level of indebtedness – both among households and governments.

Third, we display *bounded self-interest*. We do not simply seek to maximise our individual utility, but instead care about fairness and relative outcomes. We engage in altruistic activities; respond to community identities, norms and values; and are often prepared to incur personal cost to help achieve collective outcomes we perceive as good.

Even when we respond to incentives, we do so in complex, nuanced ways. Experiments show that providing people with monetary rewards as compensation for accepting an unpleasant responsibility can erode the *intrinsic* motivations of civic behaviour and public-spiritedness.

The case of the Swiss referendum on where to put nuclear waste dumps is a vivid example of this. When people were simply asked whether they would accept the nuclear waste dumps, half of them responded affirmatively, based on considerations of public responsibility. But when they were asked the same question with the offer of money, it was as if they were being told to consider only their self-interest and not public responsibility. And through the lens of self-interest, compensation equal to six weeks of the median wage was not enough.

Behavioural economics in Singapore

In Singapore, public policies have been strongly guided by the rigour of economic logic. Getting prices right, using financial incentives, making choices transparent, and letting the market work are key ingredients of this approach. Economic rationality has generally served the country well.

But what is less well known is that policies have been shaped also by considerations of people's likely responses and reactions which may not be consistent with economic logic. Of course, it is not that the government had a deep understanding of behavioural economics, or even knew that it was applying concepts from behavioural economics. Rather, it was a pragmatic approach of learning from mistakes, of developing an intuition for how people will respond, and continually adjusting policies in the light of experience.

Let me cite three ways in which insights from behavioural economics have been applied in Singapore.

Take advantage of cognitive biases

First, rather than try to change people's cognitive biases through economic argument, it may be better to modify policies to take advantage of such biases to deliver the desired social outcomes. Transport policy is a good example - few issues in Singapore are subject to as much cognitive biases, and few areas have seen as much application of insights from behavioural economics.

Take for instance, the phenomenon of sunk costs – the tendency to continue an activity once an investment of time or money has been made. Neoclassical economics tells us that sunk costs are irrelevant to current decisions – which should only be based on a consideration of marginal costs and benefits of undertaking that activity. In other words, no matter how much we pay for our cars, it should not affect how often we use them. But that is not how we behave in practice: because we have paid so much for them, we drive them more! In fact, the high cost of cars could have the perverse effect of increasing road usage. Hence, the gradual policy shift away from upfront ownership costs through the Additional Registration Fee on cars to usage costs through Electronic Road Pricing (ERP).

The ERP also offers a good way to exploit the saliency bias of motorists. Neoclassical economics tells us that we make commuting choices after taking account of all the relevant costs – parking, petrol, ERP, and others. But in reality, we are not good at making such calculations. We focus on the more frequent or salient costs – like parking or ERP – rather than less frequently incurred costs like petrol. In fact, studies by LTA show that motorists are about three times more sensitive to a \$1 increase in ERP compared to a \$1 increase in petrol costs, for the same journey. The “beep” from the in-vehicle unit and display of the charge incurred every time the motorist passes an ERP gantry has a tangible and immediate effect that filling up petrol at the pump every week does not.

Use default options

Second, understanding people's tendency to follow the default option has been a powerful element in many of Singapore's public policies.

Most people intuitively understand the importance of health insurance but never get round to buying a policy. If MediShield, the insurance programme for catastrophic illness offered through the Central Provident Fund, had been an *opt-in* scheme, people's inertia and status quo bias might have resulted in a low take-up. Understanding this, the government introduced MediShield as an *opt-out* scheme. This helped ensure a high participation rate without taking away people's choice.

Similarly, participation in organ donation was established as the default for Singaporeans over 21 years of age and of sound mind unless they explicitly opted out. Few Singaporeans chose to opt out. Kidney donations by the deceased increased by about nine times, following the passage of the legislation on organ donation – a socially good outcome that was achieved, again without taking away people's choice.

Pay attention to norms not just incentives

Third, policies have sought to preserve and enhance, rather than erode, people's intrinsic motivations for good behaviour. For instance, through the use of public campaigns and education, policy has reinforced social norms, and strengthened Singaporeans' intrinsic reasons for behaving in socially responsible and civic conscious ways.

Financial incentives and social norms go hand in hand. Take the policy on smoking, for instance. Singapore has one of the highest duties on cigarettes in the world – a powerful financial disincentive. More importantly, this is complemented by measures aimed at changing social norms and making smoking as inconvenient as possible. Public campaigns focus not just on the personal health risks of smoking but also its social undesirability – that it is not cool to light up.

One area where greater reliance could perhaps be placed on social norms rather than just financial incentives is in procreation policy. Over the last two decades, the government has made repeated attempts at raising the fertility rate through a variety of financial incentives, ranging from paid maternity leave to tax deductions for parenthood and cash handouts through the Baby Bonus. Success has been elusive; the fertility rate has continued to decline.

It is not that financial inducements do not matter, but perhaps we should borrow a leaf from the Nordic countries whose high fertility rates seem to reflect a broader set of family friendly practices and norms that permeate all parts of society. The challenge for Singapore is to harness the obviously strong desires of Singaporeans for marriage and parenthood into creating a similar broad social norm or compact that celebrates, prioritises, and supports the family.

Policymaker, heal thyself

Perhaps the most profound implication of behavioural economics is that we can no longer assume that all the voluntary choices we make will promote our well-being in the best way.

Does this mean that governments should restrict individuals' choices? For instance, if there is solid evidence that people systematically make poor choices regarding insurance coverage, school applications, savings decisions, or healthcare plans, are policymakers justified in making choices on people's behalf? In many countries, car insurance and health insurance are mandatory; saving for retirement is also increasingly becoming compulsory; seat belts, crash helmets, the list goes on.

But a word of caution is due. The fact that people sometimes make choices that may not be in their best interest does not mean that things would necessarily be better if government made those choices on their behalf. Policymakers *themselves* suffer from similar cognitive and psychological biases when analysing challenges or designing solutions. After all, government is also composed of people and they are not immune from making bad choices. A good dose of humility and self-awareness is in order.

Policymakers need to be more cognisant of our own psychological and emotional biases, and do our best to mitigate them. Cognitive biases, assumptions, and blind spots can derail good policymaking. It is important that we retain a certain scepticism about our own operating assumptions and mental models, and periodically test them against new evidence and a changing environment.

A new frontier in economics and public policy

There is much to learn. We are only beginning to understand how behavioural economics works and how its insights can be harnessed for policy design. And we need these insights more than ever. Both the domestic and external environment have become more complex and challenging. We need new lenses to complement our traditional lenses, to be able to better see and understand what people want and how they will respond.

The Civil Service College's new book, *Behavioural Economics and Policy Design: Examples from Singapore*, is therefore a timely and valuable contribution. It is very well put together and describes not just the conceptual ideas of behavioural economics but also its practical applications in public policies here and abroad. I commend the editor, Donald Low, and his team of writers for an excellent book, and urge all those interested in Singapore's public policies to read it.

Thank you.