

BEHAVIOUR AND BIASES: IMPLICATIONS FOR THE GOVERNMENT AS CHOICE ARCHITECT

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Introduction

Behavioural economics is a relatively new interdisciplinary area within the social sciences. Drawing on cognitive psychology, neurosciences, and economics it centres on individual behaviour and decision making. Combining behavioural economics with law leads to challenging recommendations for public and private policy makers, and institutions that go under the label of libertarian- or soft paternalism.¹ This applies to policy that influences the choices and behaviour of individuals without significantly limiting their freedom of choice or eroding their autonomy.² Much of current policy aiming to affect individual behaviour relies heavily on traditional instruments such as coercive regulation and financial incentives (taxes and subsidies). During the last twenty-five years in which dominant policy imperatives were deregulation and liberalisation, these instruments have been increasingly substituted and supplemented with information, education and transparency. These policy instruments are based on the assumption that if individuals have access to all information relevant to making a certain choices, and if markets are competitive, choices made will have optimal results for the individual. In a nutshell, behavioural economists argue that although regulation and financial incentives could sometimes be effective, they are just as likely to have unintended consequences. In addition, behavioural economists often assert that policies based on individual sovereignty and information which are used to influence behaviour are insufficient, inefficient and sometimes even counter-effective. This is partly due to ‘systematic psychological mechanisms’ in individual behaviour.

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¹ Thaler and Sunstein have recently become known to the general public as the authors of the book *Nudge: Improving Decisions about Health, Wealth and Happiness*. In this book the authors discuss how policy makers can use insight into psychological mechanisms of individual decision making to adopt new policies to influence individual behaviour, notably in the areas of personal finance and health-related behaviour. Richard Thaler will deliver the annual lecture of Dutch Scientific council for government policy on Thursday 26 November 2009.

² For a more detailed discussion see: C. S. Camerer, G. Issacharoff, T. Loewenstein, T. O’Donoghue and M. Rabin, ‘Regulation for Conservatives: Behavioral Economics and the Case of ‘Asymmetric Paternalism’’, *University of Pennsylvania Law Review* (151) 2003, pp. 1211-1254 and R.H. Thaler and C.R. Sunstein ‘Libertarian Paternalism’, *American Economic Review (Papers and Proceedings)* (93) 2003, pp. 175-179.

Behavioural economics' recommendations are based on the finding that people consistently 'deviate' from the rational path, resulting in a (self-perceived) loss in wellbeing. Hence, 'aberrations' from what counts as a rational choice are not incidental: the 'mistakes' people make in their judgements are systematic. To paraphrase Polonius in Shakespeare's Hamlet, there is method in madness. Note however, that irrational choice need not be inferior to rational choice *per se*.³ On the contrary: in many areas and for many decisions, emotions and irrationality – both based in the limbic system of our brain - are key to making adequate decisions. A Nobel laureate in physics who crosses the street and sees a car at high speed driving towards him is more likely to save his life by acting according to fear than by rationally calculating in what direction he should jump in order not to be hit by the car. In a different context, fear may not be advantageous. Take the example of overconfidence and optimism in financial markets. These behavioural traits often result in excessive trading by investors, with low returns and market instability as a result. One might be tempted to argue that investors should be educated to become rational. However, as Nobel laureate for economics 1997. Merton and Bodie point out when it comes to investor behaviour:

“Now suppose it were possible to change the behaviour of individuals to make them less optimistic and overconfident when analysing individual securities. Although such a change in behaviour would eliminate the bias, it might be better not to tinker with the behaviour of individuals. The reason is that although optimism and overconfidence are dysfunctional in the domain of security analysis, they may be functional in other domains vital to individual success. That is, there can be unintended and unanticipated consequences of this action. By eliminating a person's optimism and overconfidence in general, we may therefore do more harm than good.”⁴

As we will see below, Merton, Bodie and others make a plea for institutional arrangements and financial products, using state-of-the-art technologies that reduce the adverse effects of irrationality.⁵

This article will focus on two findings in behavioural economics, self-control problems and default sensitivities, and their implications for policies aimed at affecting individual behaviour. Emphasis will be placed on the role of technology: how does technology interfere with these psychological biases in behaviour, and how could it be used in mitigating or preventing the adverse consequences of these biases? Judging on the basis of these examples, our conclusion is that while on the one hand technology makes it more difficult

³ Z. Bodie and H. Prast, 'Rational pension plans for irrational people' presented at CERP conference on Security in Retirement, September 2008.

⁴ R. C. Merton and Z. Bodie 'Design of Financial Systems: Towards a Synthesis of Function and Structure', *Journal of Investment Management* (3:1) 2005, pp. 1 – 23.

⁵ Bodie and Prast 2008 *supra* note 3.

to deal with behavioural biases, it could also be used as a powerful tool to support a libertarian paternalistic policy.

I. Two Important Insights from Behavioural Economics

Behavioural economics is especially convincing where it meets conventional wisdom regarding how people behave. Everyone is familiar with feeling a lack of will power and a tendency to procrastinate. People often to “choose not to choose”; they have a tendency to refrain from active decision making. Research in behavioural economics opens up the possibility to counterweigh these tendencies in cases where they have adverse consequences for the individual. The following sections discuss research on lack of will power and self control, and peoples’ sensitivities to defaults when it comes to making choices. This will offer insight into the dynamics of behavioural problems like procrastination and choice-paralysis.

I.1. Lack of Will Power and Self Control

Behavioural mechanisms can hamper people from realising their preferences in many situations. A telling example is saving from income. Saving is notoriously difficult. People are tempted to consume rather than save, or put off the decision to start saving to a moment in the future. They may do so even when they are well-informed on their best financial interests. Even when they hold the conviction that it is better to save than to spend, well informed people often behave counter to what they have planned, and may regret this afterwards. A few examples may serve to illustrate this.

In countries such as the U.S. and the U.K., where people are free to choose whether or not to save for retirement, employees often save too little and end up having a sharp decrease in living standard in old age. As already made clear, even well-informed people delay saving for the distant future (retirement, for example) for much longer than their long-term preferences would suggest. In the Netherlands, the vast majority of the self-employed (who are not members of a mandatory pension plan) admit that they do not save adequately for retirement.

Another area where people tend to deviate from their plan is health-related behaviour. People who are determined to quit smoking or drinking, to lose weight, to start exercising, have difficulties in doing so. Only 14% of smokers in the Netherlands are satisfied with their habit: the remaining 86% has tried to quit or plans to quit in the near future. 40% of the Dutch population is currently overweight (BMI between 25 and 30), 10% is obese (BMI over 30), and more than 50% of the Dutch population wants to lose weight.⁶

According to traditional economics theory these people have no interest in their future finances and health, or they are poorly informed. However, people clearly prefer to be in good health, and it is commonly known that smoking has adverse effects. Similarly, financial stability is preferable, yet

⁶ See www.stoppenmetroken.nl and www.tipsbijafvallen.nl (accessed on 22 August 2009).

people admit that they do not adequately save for retirement. Thus it seems more likely that people suffer self-control problems, rather than preferring to jeopardise their financial situation and health.

Thaler and Shefrin were the first to draw explicit attention to the self control problem. They were triggered by the existence of the so-called Christmas Clubs that were once popular in the U.S. Membership involved making monthly deposits that did not pay an interest rate, and that could not be withdrawn until December 1. This way, Christmas Club members made sure that they had enough savings for the December month.⁷ The Dutch equivalent is the traditional piggy bank for carnival in Brabant and Limburg cafes where customers are obliged to make small deposits (two euro coins) each time they visit, with the savings used for drinking in the carnival week.

Thaler and Shefrin modelled the individual as a system consisting of a planner and a doer. The planner takes long term consequences of behaviour into account. The doer, on the other hand, is looking for instant gratification. A sophisticated planner tries to create mechanisms to prevent the doer from behaving in a way that is harmful for long term welfare. Enrolling in a Christmas Club would be an example of such behaviour, as would attempting to reduce eating when overweight.

The willingness to actively restrict oneself seems strong: The Dutch institute for budgetary education (NIBUD) found that a large percentage of homeowners did not apply for monthly mortgage rate tax deductions. When asked why they did not apply for the deductions, one out of three stated that they wanted to force themselves to save.⁸ Van Rooij, Kool and Prast found that one of the major reasons why employees in the Netherlands are happy with the current (mandatory) DB system is that they feared that in a non-mandatory system they would not save enough for retirement.⁹

I.2. Default Effects

Another behavioural mechanism is peoples' tendency to often "choose not to choose". As a result, defaults (what you choose if you do not take action, i.e. silent consent) affect behaviour. The default effect exists for a wide range

⁷ R. Thaler and Shefrin, 'An Economic Theory of Self-Control', *Journal of Political Economy* (89:2) 1981, pp. 392-406.

⁸ See: H. Prast, 'When I'm sixty-four – the psychology of retirement saving', *Wilmott Magazine* March 2005.

⁹ M. van Rooij, C. Kool and H.M. Prast, 'Risk return preferences in the pension domain: are people able to choose?', *Journal of Public Economics*, (91) 2007, pp. 701-722. In fact, as far back as in 1937 Samuelson, in a paper on the measurement of utility that he wrote as a 21-year old doctoral student, mentions mandatory retirement savings plans as an indication that the assumption of exponential discounting may not be valid. See: P. Samuelson, 'A Note on Measurement of Utility', *The Review of Economic Studies* (4) 1937, pp. 155-161.

of domains, but it is especially prominent in life cycle saving decisions.¹⁰ It plays an important role in pension plan participation, in the retirement savings rate, in asset allocation and in the withdrawal of pension wealth when changing jobs or upon retirement.¹¹ If the default is to not enrol – that is, the scheme is opt-in - employees are slow in becoming a plan member. If enrolment is the default, over 90% of new employees immediately participate in the company pension plan. The difference in participation is still high at two years of tenure: 25% higher under automatic enrolment as compared to a default of non enrolment.¹² Requiring employees to actively decide whether or not they wish to become a plan member also significantly increases plan membership as compared to a non-enrolment default. Choi, Laibson, Madrian and Metrick show that a mandatory active decision increases participation in pension schemes as compared to automatic non-enrolment.¹³ Automatic enrolment requires a default savings rate set by the employer. Research shows that the default rate attracts a high fraction of employees.¹⁴ Note, that because of this default rate effect, defaults can also reduce savings. If the default rate is set below the level that participants would have chosen themselves (in a situation with no default), the effect on total savings will lead to a decrease of the total level of savings. This calls for setting only well-informed defaults. Defaults also affect behaviour regarding the allotment of retirement savings. In Switzerland, employees in DB schemes have no discretion in the accumulation phase. Upon retirement, however, they can choose between an annuity and a lump sum. Bütler and Teppa find that the company default has a major effect on the choice between the two. This implies that defaults need to be carefully considered by those offering them.¹⁵

Health related decisions may also be default sensitive. An example is organ donation. In the Netherlands, organ donation laws and regulations are based on the principle of ‘informed consent’. Individuals are assumed to be unwilling to donate organs after death, unless they have explicitly indicated

¹⁰ Evidence outside the life cycle planning domain includes car insurance plan choices organ donation decisions, E.J. Johnson and D. Goldstein, ‘Do Defaults Save Lives?’, *Science* (302) 2003, pp. 1338-1339 and A. Abadie and S. Gay, ‘The Impact of Presumed Consent Legislation on Cadaveric Organ Donation: A Cross-Country Study’, *Journal of Health Economics* 2006 (25), pp. 599-620. On the example of pizza consumption see: Levin *et al*, ‘A Tale of Two Pizzas: Building Up from a Basic Product Versus Scaling Down from a Fully-Loaded Product’, *Marketing Letters* (13:4) 2002, pp. 335–344.

¹¹ P. Kooreman and H. Prast, ‘What Does Behavioral Economics Mean for Policy? Challenges to Savings and Health Policies in the Netherlands’, Paper prepared for the Netspar Panel on April 26, 2007.

¹² J. Beshears and J.J. Choi and D. Laibson and B. Madrian, ‘The importance of default options for retirement saving outcomes: evidence from the United States’, 2005, CeRP Working Papers 43, Center for Research on Pensions and Welfare Policies, Turin (Italy).

¹³ J.J. Choi, D. Laibson, B. Madrian, and A. Metrick, ‘Optimal Defaults and Active Decisions’, 2005, NBER working paper #11074.

¹⁴ Beshears *et al* 2005, *supra* note 12.

¹⁵ M. Bütler, and F. Teppa, ‘Should You Take a Lump-Sum or Annuitize? Results from Swiss Pension Funds’, 2005, CEPR Discussion Papers 5316, C.E.P.R. Discussion Papers.

otherwise. In behavioural economics terminology, not being a donor is the default. Donation rates are likely to increase if the system is changed into 'presumed consent', a person is assumed to be willing to donate organs, unless he or she explicitly indicated otherwise.¹⁶

For default sensitivity, there are several explanations, which are not mutually exclusive. People may regard a default as the recommended choice and/or have ill-formed preferences.¹⁷ In addition, people have an omission/commission bias: an act of commission results in more regret if things go wrong than an act of omission.¹⁸ An active decision (deviation from the default) takes time and may be postponed due to a tendency to procrastinate. Default effects imply that any policy based on silent consent is non-neutral.

However, the dynamics of default sensitivity is not so straightforward. *Who* sets the default is relevant. If it is set by an authoritative institution the default will more likely be considered the right choice; the power of the default-setting institution gives that option increased legitimacy. Policymakers do not seem to be aware of the possible consequences of this effect. Take the recent example in the city of Rotterdam. Schoolgirls are offered the opportunity to sign a document stating that they do NOT want an arranged marriage. The policymakers' intention is to reduce the number of girls who are forced to enter a marriage contract against their will. But according to behavioural economists, default sensitivity may have the opposite result. By requiring schoolgirls to declare explicitly that they do not want an arranged marriage, policymakers send the message that accepting an arranged marriage is the standard and hence the recommended choice. This demonstrates that default effects may imply that any policy based on silent consent is non-neutral, and that defaults will always steer towards one option. Political preference therefore is inseparably linked to setting defaults.¹⁹

II. Non-neutrality of Technology

The behavioural mechanisms discussed above also have ramifications for fields of individual choice and behaviour that that are (partly) mediated by technology. In this section we examine the risks and opportunities for the uses of new technology from the perspective of these mechanisms. First, we look at the implication of technological innovation for the self-control problem. Next, we turn to default sensitivity and technology.

¹⁶ Johnson *et al* 2003, *supra* note 10, p. 5.

¹⁷ Thaler and Sunstein, 2009, *supra* note 1.

¹⁸ J. Potters and H. Prast, 'Gedragseconomie en beleid', *WRR*, (forthcoming).

¹⁹ <http://www.thehollandtimes.nl/National.html?artikel=124> (accessed on 27 August 2009).

II.1. Behavioural Aspects of Technological Innovation: Financial Planning and Self Control

As we have seen in the previous section, behavioural economics argues that people find it hard to commit to strategies that maximise long-term welfare, especially when these strategies involve short-term costs.

According to the hypothesis of life cycle permanent income, people prefer a smooth pattern of consumption. In between the arrival of predictable income payments, such as monthly salaries or social security, people would prefer avoiding peaks and troughs in consumption. This would imply that for predictable income changes, payment frequency should not matter. Stephens, using the consumer expenditure surveys, examined the consumption behaviour of social security recipients. He found that non-durable consumption, for example on fresh food and eating out, peaks immediately after the receipt of the social security check. The effect was small, but most pronounced for households that rely heavily on social security.²⁰ Stephens did find that utility losses due to the non-smoothing behaviour are small. Using data from the Family Expenditure Survey, he examined the consumption cycle between paydays of wage earners. He found instant consumption sharply increased immediately after payday, but the effect was significant only for low-income families.²¹ Shapiro found that the food intake of recipients of food stamps peaked immediately after receiving the stamps, and fell considerably thereafter.²² He attributes this to a self-control problem and concludes that individual welfare might be improved by increasing the frequency of stamp distribution, although the benefits may not outweigh the additional administrative costs. Cheema and Soman found that consumption out of income or another resource is reduced if a given quantity of that resource is split into smaller units. The effect is larger for consumption that people want to control. Smaller units require a larger number of active decisions, which facilitates consumers to stop eating or spending.²³

People seem aware of this self-disciplining phenomenon. Wertenbroch found that for 'sinful' products, consumers pay a small-amount premium.²⁴ The self control problem may also require *lowering* the frequency of payment of anticipated income. By delaying payment of income that is not needed for daily consumption, people are forced to save. Consider vacation money, 13th month salary, or a bonus. There is some evidence supporting the view that people prefer not to be responsible for the decision to save, because they are aware of their self-control problem. Even though they would be free to save

²⁰ M. Stephens, '3rd of the Month': Do Social Security Recipients Smooth Consumption Between Checks?', *The American Economic Review* (93:1) 2003, pp.406-422.

²¹ *Ibid.*

²² J. M. Shapiro, 'Is there a Daily Discount Rate? Evidence from the Food Stamp Nutrition Cycle', *Journal of Public Economics* (89:2-3) 2003, pp. 303-325.

²³ A. Cheema and D. Soman, 'The Effect of Partitions on Controlling Consumption', *Journal of Marketing Research* (45:6) 2008, pp. 665-675.

²⁴ K. Wertenbroch, 'Consumption Self-Control by Rationing Purchase Quantities of Virtue and Vice', *Marketing Science* (17:4) 1998, pp. 317-337.

for their vacation if vacation money was paid out monthly instead of once a year, they feel that they would not have the will power to do so.

Technological innovation has further complicated the mechanisms behind individual savings behaviour. Contemporary banking, for instance, has made it more difficult for people to commit to saving. With the advent of electronic banking, the customer is constantly able to withdraw money from his savings account with only a few mouse clicks. Laibson argues that this may have been responsible for the decline in U.S. savings rates.²⁵ Financial innovation and technology may have reduced welfare in the context of behavioural biases, because it has increased liquidity and reduced the opportunities for commitment strategies. Recent technological developments, for example the possibility of consumption of luxury items through the Internet, have made things worse. Excessive consumption is only a mouse-click away.

While on the one hand technology is not 'behaviourally neutral' in that it reduces the individual possibility to commit to saving, it may on the other hand be useful in helping people to manage their finances. Banks could offer services (at no or low cost) which would provide their clients an additional account without Internet access. Companies could offer their employees the possibility of receiving their wage bimonthly instead of monthly, etc. Unfortunately, neither policymakers nor private institutions seem to be aware of the non-neutrality of payment technology, nor of the possibilities to use this technology to help people manage their finances despite their self control problem.

When it comes to personal finance, technological innovation also comes into play in another manner: it necessitates more decision-making. As Nobel laureate Robert C. Merton argues,

"new technology and deregulation have left households with the responsibility for making important and technically complex micro financial decisions involving risks ... that they had not had to make in the past, are not trained to make in the present, and are unlikely to execute efficiently in the future, even with attempts at education".²⁶

Does this imply that technological innovation in finance should be discouraged? Not at all, technology can work fine without each user knowing at the details of how a particular type of technology works, as long as they can rely on safe outcomes. Provided that suppliers can be trusted, the science of financial engineering is of little or no use to the consumer – just as the

²⁵ D. Laibson, 'Golden Eggs and Hyperbolic Discounting', *Quarterly Journal of Economics* (62) 1997, pp. 443-77.

²⁶ R.C. Merton, 'The Future of Personal Finance', Keynote Address, Conference on 'The Future of Life-Cycle Saving and Investing', Boston University School of Management, Boston, 26 October 2006.

buyer of a washing machine does not need to know *how* the product works, as long as he knows what it delivers and how to operate it. By analogy, the financial consumer does not need to understand how a financial products work. What is important is that he knows what the product delivers. As it happens, state of the art financial technology is fully capable of designing useful products for consumers. An example can illustrate this. Assume parents of a new born want to make sure that their child has access to the best university at the age of 18. Current financial technology is able to offer an option, 18 years from now, for four years of education at a top school. Instead of having to decide how much to save, and how to invest, parents merely need to choose the top school of their choice, and the financial technology will save accordingly. Then when the child is 18 years old, and has the ability and willingness to go to university, there will be sufficient funds to finance his or her education. If not, the parents can simply choose not to execute the option.

II.3. Behavioural Aspects of Technological Innovation: Default Effects and Risk Estimation

As we have seen in section 2, a policy based on defaults is not neutral. This is one reason why policymakers in the Netherlands were unwilling to make organ donation the default. Their objection is based on the consideration that nobody should be *assumed* willing to be a donor. Strikingly, in other cases, policymakers have had no issues with not setting a positive default. The introduction the Dutch Electronic Health Record²⁷ was based in the steering role of a default. In this system, individuals are automatically enrolled unless they actively object to this automatic enrolment by the means of returning a form. Here it seems the steering function of a default has been actively used as an instrument. The dynamics of making choices, as mapped by the behavioural economics, has further relevance for those policies that involve such technology as the EHR however. To illustrate this point, this paper will introduce another finding from the behavioural sciences: the dynamics of estimating risk.

Ever since plans for the Electronic Health Record were launched, this system has been fiercely critiqued. Much of this criticism is directed towards the actual technology itself. Critics have drawn attention to bugs in the technology by which the Electronic Health Record is administered. Another strand of debate on data files such as Electronic Health Record concerns the legislative processes by which these technology-centred policies are adopted. Lawyers, for instance, measure national policies against European legislation to evaluate its validity.

All these points of critique are relevant and useful. They form the necessary critical-discursive scaffold that surrounds government policymaking. The

²⁷ The Electronic Health Record is an electronic database containing an individual's medical record. This file can be accessed by all (medical) care-givers dealing with a particular patient. The system aims to eliminate medical errors due a lack of information.

scaffold, however, lacks a crucial component: people. Questions of safety of technology and the legal paths followed to adopt new policy leave out the fact that new policy is directed not only by technology itself, but also by politicians, civil servants, engineers etc. How these actors come to make their choices and the way they behave vis-à-vis technology forms an essential part of any new policy discourse.

The debate on the Electronic Health Record could gain in depth and propensity if individual behavioural mechanisms of the actors were taken into account. Consider the core of the disagreement between proponents and opponents of the Electronic Health Record, the issue of the risk that the system is not safe when it comes to privacy of the individuals included in the system. As the future is largely unknown, the issue of risk is an issue of informed estimation. Various experts, on basis of their expertise, try and make a tentative judgement of whether systems like the Electronic Health Record are safe now and will remain safe in the future. However, these future judgements are prone to behavioural biases.

A body of behavioural economics research on risk estimation shows that people consistently tend to overestimate small risks and underestimate more serious risks, which is known as overconfidence bias. For example, public perception of the risk of lung cancer for a lifetime smoker is about 0.45 whereas actual risk is estimated to be about 0.10.²⁸ Another example of how people generally estimate risks poorly, as is given by Johnson *at al.* They asked a group divided into three how large a premium they were willing to pay for an insurance policy that would pay \$100,000 were they to die on flight from London to Boston. Each group was presented with different conditions: group 1 got paid only if death was the result of a terrorist attack (it should be noted this research was carried out well before 9/11). For the second, the insurance company would pay only if death was due to a mechanical failure of the airplane. The final group would receive the \$100,000 regardless of the cause of death. From a rational perspective, the insured would be willing to pay the most for an insurance policy that covers all risks, not just a single one. In fact, the mean premiums did not differ significantly from each other.²⁹

Research on risk estimation calls for prudence in taking estimations of risk at face value. Experts are not excluded from behaviour biases and nor are politicians. When, for example, the risk of Electronic Health Records being hacked is considered as small, such claims should be weighed with caution. A tendency to mentally minimise risk may distort the accuracy of such judgments. In fact, overconfidence has dual implications for innovations such as the Electronic Health Record: not only will the debate over risks be

²⁸ K. Ahmed, D. Silverman and F. Sloan, 'Are Smokers Misinformed? Evidence from Subjective Beliefs about Mortality and Health', 2006, working paper.

²⁹ J. Johnson, J. Hershey, J. Meszaros and H. Kunreuther, 'Framing, probability distortions and insurance decision', 1993 (51), pp. 35-5.

flawed by behavioural biases, so will its possible use. Keeping a technology safe from errors and protecting it against hacking from outside, requires constant maintenance and arming against possible future risks, which are again prone to biased estimation.

Technological interaction between policymaker and individuals is not solely a story of risk but offers opportunities as well. Most importantly, technology can be used to by-pass unwanted default effects by forcing people to actively reflect on their decisions. If silent consent options are ruled out, people do not have the possibility to make choices that they regret afterwards simply by having made no active choice. Choi, Laibson, Madrian and Metrick) show for the pension savings domain, that a mandatory active decision increases participation in pension schemes with 25% as compared to automatic non-enrollment. Forcing people to say yes or no to the question of participating helps to get those employees on board where they would otherwise have procrastinated.³⁰

This is where technology might be helpful. Institutions, including policy makers, make ample use of technology when it comes to the relationship with clients and citizens. For example, tax statements can only be sent in electronically. Airline tickets can only be booked electronically if the buyer checks the box to agree with the conditions. Combining the two might help to guide behaviour at low cost. Take the example of organ donation. Adding a final question “Do you want to be a donor YES/NO”, and requiring the taxpayer to check the yes or no box before submitting the tax form would be a neutral way to make people choose. Asking this question each year would, furthermore, help people change their mind to enroll or not as a donor.

Conclusion

Of course, the examples discussed above only skim the surface of what behavioural economics could mean for the interaction between policy, technology and individual behaviour. It can only serve as an invitation to further explore this dynamic. That said, behavioural economics convincingly shows that individuals’ decisions lack the rationality that has long been assumed in mainstream economics. This is especially true for the domains of personal finance and health related behaviour, but also applies to judgments about risk.

Behavioural economists recommend a new type of policy paradigm that more accurately considers the role of individual behaviour, based on the findings of behavioural economics. In particular, they recommend a form a soft paternalism (or libertarian paternalism). Soft paternalism assumes that people know what is in their best interest, but need help to take actions that are in their best interest – either because it is difficult to make the right choice or because they struggle to commit to actions that have short-term costs but long-term benefits. The main benefits are that it will help people

³⁰ Choi *et al* 2005, *supra* note 12, p. 5.

make better choices about long-term complex issues in a non-intrusive, inexpensive and effective way. However, this is not an easy task; there are several areas where caution and further research is still needed. When using well-defined defaults, how can it be gauged that they serve in the interest of the individual and not of the policymaker? Such questions call for a strong normative framework to embed the practice of libertarian paternalist policy. Soft paternalism may thus not be politically neutral. As behavioural economics enters the political realm, policymakers and academics must also carefully consider the role of heterogeneity. Defaults excise strong effects, as many people choose not to choose. If populations are significantly heterogeneous, and defaults are not tailored to individual characteristics, then many individuals might still make a choice that is detrimental to their well-being.

Soft paternalism seems an attractive alternative to affect behaviour where regulation and taxation are viewed as too intrusive. Nonetheless, some scholars, notably Glaeser believes that soft paternalism may make things worse. One concern is that soft paternalism is less easy to observe than hard paternalism (such as excise taxes), and therefore less easy to control democratically. Another argument is that soft paternalism imposes an emotional tax on behaviour, which generates no government revenues.³¹ The latter argument rightly reflects the view that soft-paternalism (and in fact any government intervention) should be applied only after a careful analysis of costs and benefits, taking account of consumer heterogeneity.

What follows from this is that policy makers should take note of the full spectrum of behavioural evidence as well as subject new policy instruments based on this to demands of transparency and accountability. In such a framework lands our plea for considering the use of libertarian paternalist policy as a supplement or alternative to traditional policies, as well as considering individual biases in policy discussions on the safety of technology. Such better-informed policymaking would not be based on a projection of how individuals make choices, but instead is based on what we know about the psychology of individual choice.

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³¹ See: E. Glaeser, 'Paternalism and Psychology', *The University of Chicago Law Review* (73) 2006, pp. 133-156.