



Behavioural Economics and Complex Decision-Making

Implications for the Australian Tax and Transfer System

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Key Points

Many aspects of observed human decision-making differ from the ‘rational’ behaviour assumed in economic models. For example:

- People are much more concerned about possible losses than possible gains
- People are inclined to stick with the status quo
- People dislike uncertainty
- People value fairness
- People sharply discount the future compared to the present

For all but the simplest of decisions, people generally do not attempt to find the optimal solution, but rather apply simple decision-making strategies:

- They stick with what they know
- They follow others
- They settle for something that is good enough, rather than searching for the best

The more complex the decision, the less well equipped people are to deal with it. As a result, people often make decisions which do not appear to be in their best interests:

- They procrastinate, putting off things such as saving for retirement
- They stick with the default option, even if it is not the best
- If a decision is too complex they may avoid it altogether
- People are readily confused, and prone to misleading advice

These issues tend to be particularly prevalent among the least well-off.

In the case of the Australian tax system:

- Most individual taxpayers use a tax agent, though it is costly to do so
- A large number of people fail to complete a tax return, even if they are entitled to a tax refund
- Welfare payments delivered through the tax system, such as the superannuation co-contribution, are likely to be missed by those who stand to benefit most

There is an opportunity to apply insights from behavioural economics, facilitated by advances in information technology and service delivery, to remove the burden of complexity from most individual taxpayers:

- Send people pre-filled tax forms. This would represent a default tax return, and those who accept it could avoid the expense of a tax agent
- Those with more complex affairs may still add additional information, and/or consult a tax agent

This approach can achieve significant behavioural change at minimal cost, and reduce inequities in access to services and entitlements. This report reviews academic studies from economics, psychology and service delivery which provide the theoretical and empirical basis for these observations.

Contents

1. Purpose	2
1.1 Homo economicus vs <i>Homo sapiens</i>	2
1.2 Outline.....	2
2. The role of economic experiments	4
3. Psychological anomalies	5
3.1 Risk aversion	5
3.2 Loss aversion.....	5
3.3 Mental accounting.....	5
3.4 Status quo bias	6
3.5 Hyperbolic discounting.....	6
3.6 Probabilities	7
3.7 Anchoring.....	7
4. Social preferences and norms	8
4.1 Conditional cooperation.....	8
4.2 Equity.....	8
5. Heuristics and bounded rationality.....	10
5.1 Optimising vs satisficing	10
5.2 The adaptive toolbox	10
5.3 Rationally irrational	11
6. The things people do.....	12
6.1 If in doubt, don't do anything.....	12
6.2 Choice overload.....	13
6.3 Uncertainty aversion.....	13
7. Applying these insights	15
7.1 Nudges.....	15
7.2 The power of defaults	15
7.3 Overcoming procrastination.....	15
7.4 Channelling decisions.....	16
7.5 Helping people to help themselves.....	17
7.6 Electronic service delivery technologies.....	17
8. Some thoughts for the Australian tax and transfer system.....	20
8.1 Remove the burden of complexity from most individuals.....	20
8.2 Complexity and non-lodgement.....	21
8.3 Complexity as a barrier to equity	21
8.4 Complexity and consumer protection	22
8.5 Improved service delivery	22
8.6 A simpler tax system.....	23
References.....	24

1. PURPOSE

Individuals are faced with an increasingly complex array of decisions in their day to day lives. Economic growth and deregulation has greatly increased the choices available to people in Australia, as in other comparable countries. For example, where 30 years ago households had access to a single type of telephone connected to a single network, there are now a plethora of technologies, companies and pricing packages. Similarly with financial and investment products, the number of choices has increased massively. Households now have access to many different types of mortgage and a great range of different ways in which they can invest their savings.

While this increase in the range and diversity of choices undoubtedly brings many benefits, it does require people to make ever more complex decisions. For human decision-makers, particularly those with limited knowledge and experience, this can be a difficult task. At the same time individuals are increasingly responsible for their own finances, for example as personal superannuation replaces company pensions. With increased choice comes increased risk of costly error. Many people feel there are too many choices and they do not have the knowledge required to make many of the decisions which are expected of them (Fear 2008; ASIC 2009).

As people's financial circumstances have become more complex, so too have their interactions with the tax and transfer system. To some extent there is an inevitable arms race between financial innovation and tax complexity. As new financial instruments emerge, including many specifically designed to minimise tax, tax law must also evolve to deal with them; and as tax law changes, the finance sector is quick to respond with innovative products and strategies. This has resulted in a complex and continually changing tax and transfer system which may not be well suited to the vagaries of human decision-making.

1.1 *Homo economicus* vs *Homo sapiens*

Economic modelling is a key tool used to assess the impacts of policies such as deregulation and taxation. The vast majority of economic models are based on the rational actor paradigm, which assumes that people are rational and act to maximise their self-interest. They are also frequently assumed to have full information and to use it appropriately. This idealised economic agent is termed *Homo economicus*, and stands in contrast to our own species *Homo sapiens*.

Behavioural economics draws on insights from economic experiments and psychology to bring a deeper understanding of human behaviour into economic theory. Although a relatively new discipline, it is part of mainstream economics – for example, it is published in leading economic journals, is represented in many academic departments and has been recognised by the Nobel Prize Committee. As a component of economic thinking it can contribute to the development of policy which works both in theory and in practice.

Behavioural economics show that, in even the simplest of economic environments, real human behaviour often deviates from theoretical assumptions as people make choices that do not result in the greatest possible benefits. As complexity increases the rational actor paradigm becomes increasingly unrealistic (although market mechanisms also operate to mediate complexity costs). With so many choices available, people are unlikely to make a fully informed choice, and instead rely on simple decision-making rules and habits.

1.2 Outline

To understand how people will respond to a policy system it is necessary to have an understanding of how they deal with decisions. This paper reviews evidence from the behavioural economics and psychology literature on how people make decisions, in both simple and complex environments.

- Section 2 briefly describes the experimental method which forms the basis for the behavioural economics literature.

- Section 3 reviews some key behavioural economics findings. People show a series of ‘behavioural anomalies’, patterns of behaviour which are apparently irrational (according to simple economic theory) but consistent – hence Ariely’s (2008) description of human decision makers as ‘predictably irrational’. Such anomalies are particularly apparent when weighing up gains, losses and risk, and in trading off current and future circumstances.
- Section 4 considers another series of behavioural economics findings – the importance of social preferences and norms. People frequently place value on the welfare of others, rather than just their own self interest, and perceptions of equity can prove crucial in guiding decisions.
- Section 5 describes heuristics as a model for how people actually make decisions. Rather than weighing up all the costs and benefits of the available options, people fall back on simple decision-making rules for all but the simplest of decisions. These rules prove surprisingly powerful, and often outperform more thoughtful deliberations.
- Section 6 considers how behavioural anomalies and heuristics result in unexpected, and frequently suboptimal, behaviour using examples from real world financial decisions. People are inclined to put off making decisions (particularly complex decisions), stick with default options and are readily swayed by how information is presented.
- Section 7 considers how this theoretical and empirical framework can provide a basis for designing policies which are adapted to human behaviour. For example, smart policies can ‘nudge’ behaviour (see Thaler and Sunstein 2008) through informed use of choice menus and defaults. The circumstances in which such interventions are effective and counterproductive are discussed.
- Finally, section 8 considers some implications for the Australian tax and transfer system. System complexity can lead to citizens missing out on entitlements or incurring significant compliance costs (e.g. through use of tax agents), with the impacts being felt disproportionately by less advantaged members of society. Improvements in service delivery can reduce the complexity faced by individuals, even if the underlying system remains rather complex. The learnings and techniques from behavioural economics can guide both policy and service delivery, especially in relation to improving engagement and decision-making.

2. THE ROLE OF ECONOMIC EXPERIMENTS

The rational actor paradigm was only ever intended as an approximation of human behaviour. While it is fairly simplistic, the question is whether it is possible to develop a better model of human behaviour. In recent years empirical experiments have been used to contribute to economics, providing a richer understanding of human behaviour. Economic experiments were pioneered by economist Vernon Smith, and psychologists Daniel Kahneman and Amos Tversky (for which Kahneman and Smith were recognised with the 2002 Nobel Prize). Many of the studies covered in this paper are based on laboratory experiments, in which human participants make decisions in response to scenarios presented to them.

While laboratory scenarios are artificial, they can be made more realistic by paying participants based on the outcomes of their decisions. Such experiments provide a method for testing how people respond under controlled and replicable conditions. Just as a biologist may begin with laboratory experiments before moving into the field, so can behavioural economics. In 'field' experiments people can be subjected to different experimental treatments under more natural conditions. They may not even be aware that they are participating in an experiment. For example, Iyengar and Lepper (2000) tested how people react when faced with either limited or more extensive choices. They did this both in the laboratory, where students were asked to participate in an experiment in which they had to select from a range of chocolates, as well as in the field – by setting up a display inside a food shop and observing customers' responses. In both cases the experimenters could vary the number of choices available to people in order to test whether it made a difference, on average, to their decisions (which it did – see section 6.2).

The use of controlled experiments allows hypotheses to be tested and empirical data to be gathered. This has proved valuable for contributing to economic theory and providing a richer understanding of real economic decision-making. It also has great potential for testing proposed policy interventions (Smith 1994). Remarkably little is known about how people make decisions, so there is potential for any policy intervention to have unintended consequences. Experiments can be used to test how people respond, whether in a simulated laboratory environment or in small scale field studies. For example, experimental economics was used to test auction mechanisms for the release of licences for new '3G' mobile phone bandwidth (see Klemperer 2004).

No pharmaceutical can be released without its efficacy being thoroughly tested in clinical trials. In many cases this same approach may be applied to policies aimed at human decision makers. While experimental studies require time and money, they can provide the evidence to underpin sound policy and minimise the potential for unintended consequences (for more detail see Smith 1994; Reeson and Nolles 2009). Consideration may therefore be given to testing any proposed changes in the tax and transfer system either in the laboratory (which may be particularly applicable for changes to service delivery) or through small scale trials, in order to ensure that policy is based on the best possible empirical evidence.

3. PSYCHOLOGICAL ANOMALIES

3.1 Risk aversion

One of the first and most obvious deviations from pure rationality is risk aversion. A fully rational economic agent is indifferent between \$50 and a 50% chance of \$100 or \$0. However empirical studies show that most people are risk averse to some extent (e.g. Binswanger 1980), and would prefer the certain \$50. Most would also prefer a certain \$49 to a 50% chance of \$100. The degree of risk aversion varies between individuals (and some are risk seeking, preferring the riskier option with the higher payoff), as well as with context and the amount at stake – it can be readily quantified using a simple experimental protocol or survey questions (Holt and Laury 2002). Unlike most other anomalies, risk aversion is often incorporated into economic models.

3.2 Loss aversion

Probably the most important of the behavioural anomalies is loss aversion – people tend to give potential losses greater weight than potential gains (Kahneman and Tversky 1984). Loss aversion means that economic decisions are considered quite differently depending on whether they involve losses or gains, with potential losses having a far greater motivating effect. People are far more tolerant of a foregone gain than a loss, even though in economic terms they are equivalent. People also respond differently to risk according to whether it involves potential gains or losses. While they are generally risk averse for gains (e.g. preferring a certain \$50 to a 50% chance of \$100), they actually become risk seeking where losses are concerned (e.g. most choose a 50% chance of losing \$100 over a certain loss of \$50) (Kahneman and Tversky 1984).

The differential treatment of gains and losses can lead to anomalous decisions, since simply changing the way in which a decision is presented can change whether people view the consequences in terms of gains or losses (Tversky and Kahneman 1981). For example, in an experimental setting where people start out with \$50 and are then offered the choice of either keeping \$20 or taking a gamble with a 1/3rd chance of keeping all \$50 and a 2/3rd chance of keeping nothing, most choose to keep the \$20; if instead the choice is framed as losing \$30 or a gamble with a 1/3rd chance of keeping all \$50 and a 2/3rd of losing it all, most choose the gamble (De Martino et al. 2006). While these two scenarios are materially identical, simply changing the wording from ‘keep’ to ‘lose’ causes a significant proportion of people to change their behaviour.

Loss aversion and related issues around framing and risk together make up prospect theory (Kahneman and Tversky 1979). It has far reaching consequences in a range of domains. In policy terms, loss aversion accounts for the tendency of those adversely affected by a proposed policy change to campaign much harder than those who stand to benefit. It also impacts on investment decisions – for example, share traders tend to hold on to poorly performing stocks to avoid realising a loss, but will readily sell rising stocks to realise a gain (Scheffrin and Statman 1985). This anomaly (known as the disposition effect) is seen both among independent traders and even, though to a lesser extent, in professional traders (Shapira and Venezia 2001).

3.3 Mental accounting

Mental accounting uses prospect theory to explain how individuals and households keep track of their finances (Thaler 1985, 1999). It shows how the principle of fungibility (i.e. that a dollar is always interchangeable with another dollar) is frequently violated by human decision-makers. Mentally people divide their money into different ‘accounts’, for example an account for the rent or mortgage, an account for groceries and an account for going out. The physical manifestation of mental accounting is the series of money jars on the kitchen shelf labelled ‘rent’, ‘food’, ‘electricity’, etc. Money is not necessarily fungible between different mental accounts. Within each people try to avoid losses, for instance by offsetting them against gains, or combining them so that just a single loss is experienced (Thaler 1999).

There are also inconsistencies in the relative value of money – for example, people go to great lengths to save a few dollars from their grocery or petrol bills, but may disregard such amounts when making decisions in other accounts such as holidays. Mental accounting and loss aversion may explain why property owners are reluctant to sell at a price which represents a nominal loss, while any amount over the original purchase price is viewed as a gain (with costs of capital incurred in the meantime often disregarded). People can be quite flexible in their mental accounts in order to feel good about the outcomes (Thaler 1999; Cheema and Soman 2006). Losses which are not obvious such as foregone interest are disregarded, while windfalls are enjoyed, and consumed more readily than normal income (Arkes et al. 1994).

Mental accounting may offer an explanation for the apparently irrational behaviour of many taxpayers, who prefer to pay slightly too much tax through the year in order to get a refund when they submit their annual tax return. At face value this is irrational, because the extra payments earn no interest, and many people incur substantial interest rates on credit card debt and mortgages in the meantime. However, most people do not take an all-inclusive view of their finances. Many are perhaps anxious to ensure that their ‘tax’ mental account delivers a gain rather than a loss come tax time, while any foregone interest remains unknown and ignored. Ensuring they receive a refund may also provide some people with a ‘windfall’ which they can justify spending on something they would not normally purchase.

People may even be using the tax system a little like a ‘Christmas Club’ savings fund, in which small amounts of money are locked away through the year in order to receive a large payment at the end. This comes at a cost, and at first glance is quite irrational. However, for people who lack self-control, locking themselves into such a savings scheme may actually be a rational way of saving for a major future expense. These values will affect responses to any reform of the tax and transfer system. Mental accounting indicates that particular care should be taken to avoid a system in which people incur unexpected liabilities at the end of a tax year. These will be perceived as losses, even though they may have been profitable for the people concerned.

3.4 Status quo bias

Loss aversion triggers further anomalies, such as the endowment effect, in which people tend to value things they already hold more than equivalent things they do not have (Thaler 1980). This means that the amount a person is willing to pay to acquire something tends to be less than the amount they would be willing to accept to part with it. Brain imaging studies show that, contrary to rational choice theory, there are neurological distinctions between buying and selling decisions, with selling triggering loss aversion (Weber et al. 2007; Knutson et al. 2008). Endowment effects are not observed in professional traders, but are prevalent among their less experienced customers (List 2004). The more unfamiliar and uncertain the situation, the more likely people are to show this anomaly (van Dijk and van Knippenberg 1996).

Loss aversion and endowment effects lead to status quo bias (Samuelson and Zeckhauser 1988), where the perceived disadvantages of making a change (which are seen as potential losses) can outweigh the perceived benefits (which are potential gains), even if the benefits are likely to be greater. Again this has a big impact on behaviour, as people try to avoid any decision they may come to regret in the future. For example, in Australia ‘super choice’ was introduced in 2005, which enabled people to switch their retirement funds between investment managers. It was expected that many people would take up this option, but the actual numbers have been low (Fear and Pace 2008). It is likely that this is in part due to status quo bias, as the fear of incurring a loss in a new fund relative to the previous one weighs more heavily than the potential for gains, even if gains are considered more likely.

3.5 Hyperbolic discounting

In economic models, future benefits are discounted against the present at a constant rate. Human decision-makers apply much higher rates in the short term than the long term. For example, someone may prefer to receive \$100 now over \$200 next year; however, they may also prefer \$200 in three years time over \$100 in

two years. This is termed hyperbolic discounting (Ainslie 1975), and has been demonstrated empirically in a range of studies on people (and animals) (see Ainslie 2001). Hyperbolic discounting relates to issues with self control and procrastination – people will consume more in the short term than is in their long term (or even tomorrow morning) interests, and will put off sacrifices such as exercising or saving money. Extreme forms of hyperbolic discounting are linked to addiction (e.g. Madden et al. 1997).

3.6 Probabilities

Another anomalous feature of human decision-making under risk is the overweighting of certainties and small probabilities compared to intermediate probabilities (Kahneman and Tversky 1984). Certainty is greatly valued – increasing the probability of an outcome from 99% to 100% is considered much more valuable than an increase from 98% to 99%, even though the difference in the expected payoff is the same. Hence people often purchase insurance to protect themselves from small risks, even for losses which they could readily absorb. In terms of tax, people are likely to overemphasise the small probability of being audited, which may lead to greater compliance than predicted by rational choice models.

3.7 Anchoring

Human decision-makers are prone to anchoring effects, in which people will focus on an initial piece of information, even if it is uninformative (Tversky and Kahneman 1974). Simply showing people a random number can provide an anchor for subsequent decisions. This is used by salespeople who can make a good appear cheap simply by saying ‘price reduced’, regardless of whatever the appropriate price may be. Great care therefore needs to be taken before showing people a number as it will influence subsequent decisions.

Together the psychological anomalies described in this section have a major impact on decision-making behaviour. Their effects have been documented both in controlled laboratory experiments and in empirical studies of real world decisions. People are fearful of losses, handle risk inconsistently, are prone to procrastination, tend to stick with the status quo and are easily swayed by irrelevant numbers. However, these ‘irrationalities’ appear consistently across the population, so public policy can be designed to account for them when trying to promote behavioural change.

4. SOCIAL PREFERENCES AND NORMS

Another, perhaps more encouraging, series of deviations from the rational actor paradigm, are social concerns. Economic experiments repeatedly demonstrate that many people value not just their own well being but also that of others.

4.1 Conditional cooperation

In the laboratory, people are often prepared to sacrifice their own interests for the sake of the greater good (e.g. Ledyard 1995). There are of course numerous real world examples of this, from charitable donations to volunteering. Neuro-economic studies (experiments in which participants are inside brain scanners) suggest that cooperating with others can be inherently rewarding – it stimulates areas of the brain associated with reward processing, more so than more profitable non-cooperative actions (Rilling et al. 2002). However, people typically do not cooperate unconditionally. In a public goods dilemma¹ most people will make a personal contribution provided others do the same, but if some free ride then cooperation will stop (Fischbacher et al. 2001).

Conditional cooperation is also relevant to tax compliance. International studies indicate that compliance tends to be higher than rational models predict, given monitoring and penalty levels, even if people are significantly risk averse (see Frey and Torgler 2007). Tax morale, which is people's intrinsic motivation to pay taxes, is important, and relates to conditional cooperation. Just as in public-goods experiments, people will be more willing to pay tax if they perceive that other people are also paying their fair share. An empirical study across 30 countries shows a strong correlation between tax morale and perceived levels of tax evasion by others (Frey and Torgler 2007).

4.2 Equity

Fairness and reciprocity prove particularly strong motivators (e.g. Fehr and Fischbacher 2002). In laboratory experiments, participants are often willing to settle for a smaller payment provided everyone gets the same. People will reject outcomes they perceive as unfair, even if it means getting less than they otherwise might (Güth et al. 1982). Inequity aversion may have a deep-seated psychological basis – monkeys have been shown to reject unequal 'pay' (Brosnan and De Waal 2003). Social preferences are typically reciprocal. People are likely to act positively towards someone who has acted positively towards them, even if it involves some personal cost; they will also go out of their way to punish someone they perceive to have acted unfairly (Fehr and Gächter 2002).

If there is a clear equitable solution to a dilemma, people are likely to cooperate to reach it. For example, in a public goods experiment where all participants have identical endowments and payoff functions, participants readily agree to make equal contributions (see Ledyard 1995). In more complex scenarios cooperation may be more difficult (although the experimental evidence is mixed). Tax complexity might adversely impact on tax morale if it reduces transparency and makes it less clear how much people should be contributing. However, if complexity increases perceived equity it may have the opposite effect.

¹ The public goods dilemma is a standard of experimental economics. In a typical experiment, four participants begin with \$10 each, and may contribute any amount of this to a shared fund (the 'public good'). Contributions to the fund are doubled and divided equally among all participants. The optimal solution is for each to contribute \$10, giving all four participants a payoff of \$20. However, any one individual can free ride, keeping their \$10 while still sharing in the others' contributions. A purely selfish person would contribute nothing to the public good, but people typically do. Average contributions are \$4-6, and can be increased or decreased by different policy institutions. This simple experimental scenario reflects many real world dilemmas such as supporting charities, contributing to the environment, etc.

There is again a degree of consistency in these behavioural anomalies, albeit with individual and contextual variation, so public policy can be designed to accommodate such preferences (e.g. Frey 1997; Bowles and Hwang 2008).

5. HEURISTICS AND BOUNDED RATIONALITY

5.1 Optimising vs satisficing

In idealised economic models agents optimise each and every economic decision. However in the short run, individuals do not. For the simplest of decisions people do optimise by trading-off the various attributes, but as complexity increases they are more likely to use heuristics (Kahn and Baron 1995). Heuristics are ‘rules of thumb’ or mental shortcuts which people use to make decisions (Simon 1955; Tversky and Kahneman 1974). For example when faced with two or more options, people commonly apply a ‘recognition heuristic’, that is they select the option which is most familiar to them (Goldstein and Gigerenzer 2002) (hence why so much is spent on essentially uninformative brand advertising). Another frequently used heuristic is to imitate others, particularly in an uncertain situation, which leads to conformity (see Bikhchandani et al. 1998; Velez et al. 2009).

Heuristics are ‘non-compensatory’ in that they do not incorporate all available information in the way that a compensatory model (such as a regression) does (Gigerenzer and Goldstein 1996). For complex decisions people generally do not attempt to optimise. Rather they tend to satisfice, that is, they search until they find an option which is good enough, even if it is not the best possible (Simon 1955). Such simple decision-making should not be considered as random – in fact it has been argued that behaviour becomes more predictable when people apply heuristics to complex problems. The more difficult a decision, the less competent people are to make it, and so the less attention they pay to information – their behaviour instead follows predictable rules (Heiner 1983).

The way in which information is presented can also influence how people make decisions – for example, when information is displayed in words rather than numbers people are more likely to apply heuristics than optimisation (Stone and Schkade 1991). If information is readily available (i.e. on the screen) people will use it; if they have to search for information (from memory or elsewhere) they are more likely to apply a satisficing heuristic (Bröder and Newell 2008).

5.2 The adaptive toolbox

The ‘adaptive toolbox’ provides a metaphor of a mind equipped with a set of heuristics and decision-making strategies (see Gigerenzer et al. 1999). The adaptive toolbox consists of evolved capacities, including capacities to learn, that form the building blocks of heuristics. For a person to retain a heuristic, it must be perceived to work (although it does not necessarily have to be right every time). Successful heuristics are frugal in what they account for, in order to be fast, and they are adapted to their environment – that is they must fit reality (Gigerenzer et al. 1999). Decision-making takes place in a human mind, which is a product of biological evolution rather than a strictly logical mathematical machine.

As complexity rises people tend to simplify their decision-making processes by relying on heuristics; they become more likely to use elimination rather than optimisation, and consider fewer attributes (Timmermans 1993). Empirical studies show that once the number of options or attributes exceeds three or four, heuristics become more prevalent (see Payne and Bettman 2001). Complexity and the way in which information is presented doesn’t so much influence what people decide as how they decide, that is which heuristic or strategy they apply (Bröder and Newell 2008). The greater the uncertainty surrounding a decision the more likely people are to use heuristics, but this can mean that they will respond more slowly (or not at all) to changed circumstances (Heiner 1983). Complexity can therefore hinder people’s ability to adapt to new information (Deshmukh et al. 2008).

When faced with a novel situation, people are likely to transfer heuristics and strategies from other areas (Payne and Bettman 2001). The context of the decision will in part determine which heuristics or strategies are applied. People tend to consider simplified representations of situations, and focus on one or a few key

features which determine how they respond (Devetag and Warglien 2008). In experiments people distinguish between cooperative scenarios, in which many apply cooperative social norms, and competitive scenarios in which each person seeks to maximise their own self-interest (Pillutla and Chen 1999; Tenbrunsel and Messick 1999). Simply changing the way in which a situation is framed causes many people to change their behaviour (Reeson and Tisdell 2007). The more complex the setting, the more likely people are to focus on the simplest cues when selecting their strategy (Devetag and Warglien 2008).

People can adapt and change their heuristics, and unsuccessful ones can be discarded. They can also learn from other experiences. However, once a particular heuristic or strategy has been selected from the adaptive toolbox, there is a tendency to stick with it even if circumstances change, which can result in people applying inappropriate decision-making strategies (Bröder and Newell 2008). Providing salient feedback is likely to encourage people to adapt their heuristics and to drop inappropriate ones. In the absence of any feedback people are unlikely to change their decision-making strategy. In policy terms it may therefore be useful to ensure that people see relevant (but simple) information on the outcome of their decisions in order to help guide future behaviour. In the case of tax, people receive little feedback on their decisions (see section 7.5) and have limited opportunity to learn as they only consider it once a year. There may therefore be benefits from moving to a system in which people are not automatically required to complete individual tax returns – this is discussed further in section 8.1.

5.3 Rationally irrational

Heuristics do not involve formal optimisation, but they should not be considered as a second best solution, or a symptom of irrationality. They enable people to make rapid, effective decisions. Human decision-makers should be considered as boundedly rational (Simon 1956), making good decisions within cognitive constraints. Bounded rationality recognises that people have limited cognitive resources and many decisions to make. In economic terms, heuristics reduce the transaction costs involved in thinking. Decisions can be made quickly (which in many cases, such as responding to danger, is vital), and people can get on with thinking about or doing something else.

Heuristics also frequently produce good decisions – selecting the familiar option or doing what everyone else is doing is frequently an eminently reasonable choice. A number of empirical studies have demonstrated heuristics to be accurate, and to sometimes outperform more cognitively complex methods (e.g. Gigerenzer and Goldstein 1996; Goldstein and Gigerenzer 2002). Nor are heuristics simply an easy option for those with less cognitive capacity – in fact there is some evidence that more intelligent people are more likely to apply heuristics to a particular problem (Bröder 2003). True intelligence is perhaps as much about selecting the best method of making a decision as being able to apply more complex decision-making methods.

In many cases optimisation is simply impractical. For some decision problems as the number of attributes increases, the number of potential combinations can increase exponentially (for a formal treatment of computational complexity theory see e.g. Garey and Johnson 1979). An example of this is the travelling salesman problem (TSP), where the aim is to choose the shortest possible route between a number of cities. For 5 cities there are 12 possible routes so it is possible to calculate them all and select the shortest. For 10 cities there are 181,440 possible routes; for 20 there are 60,822,550,204,416,000. Even the most powerful computers cannot perform optimisation by enumerating and evaluating each combination. Most boundedly-rational human decision-makers can rapidly devise a journey that is a reasonable approximation to optimal for a many-city TSP, by applying heuristic approaches based on pattern-matching, decomposition, logic and experience.

6. THE THINGS PEOPLE DO

Psychological anomalies, social norms and heuristics are not just of academic interest. They have a major impact on day to day decisions as well as on major decisions such as long term investment and health. Most people appear to devote minimal time and effort to such decisions, instead often relying on the simplest of heuristics. For example, a survey of university staff found that most spent less than an hour deciding their retirement savings contribution rate and asset allocation (Benartzi and Thaler 1999). While by no means all decisions are flawed, a number of common tendencies can be identified.

6.1 If in doubt, don't do anything...

Fear of losses makes people stick to the status quo. Hyperbolic discounting means people may put off things that are in their interests to do, such as saving more or completing their tax return. Heuristics are habit forming, and so can be a barrier to changing behaviour, even when there is a good reason to change. People therefore have systematic tendencies towards inertia and procrastination. One manifestation of these behavioural patterns is the tendency of human decision-makers to stick with defaults, even where they are not necessarily the best option. A default represents a status quo, so any decision to move away from it runs the risk of incurring a loss compared to the status quo if the decision turns out to be a poor one. 'Stick with the status quo' is therefore a powerful heuristic.

There are a number of case studies which document the influence of defaults. One example is provided by car insurance legislation in two US states (Johnson et al. 1993). In both states people must choose between a full insurance policy and a cheaper one which restricts rights to sue. In New Jersey, legislation makes the restricted form the default, and people have the option to upgrade to the more comprehensive version – only 20% do so. In Pennsylvania the more complete version is the default, and is retained by 75% of people. Similarly, organ donation is significantly higher in countries in which the default is for organs to be donated unless there are specific objections, compared to those countries in which the default is no donation (Johnson and Goldstein 2003).

Defaults and inertia have a major contribution on people's retirement savings. For many US employees, enrolment in their equivalent of superannuation (known as 401(k) accounts) is optional, but in many cases employers are required to match contributions (up to a certain level) made by employees. It is clearly in employees' long term interests to enrol as their contributions will be matched, leaving them better off. However many delay, or never get around to, enrolling. By failing to take advantage of matching employer contributions they are effectively leaving money unclaimed (Beshears et al. 2006). If the default is enrolment, rather than non-enrolment, participation is significantly higher (Madrian and Shea 2001). Among those who do enrol, defaults can also impact their contribution rates (i.e. how much of their salary they choose to invest in the fund). Many people retain the default option; those who do actively choose tend to go for round numbers (5%, 10%, 15%), even though there is no logical reason for this (Benartzi and Thaler 1999).

Retirement funds usually offer a range of asset allocation options, such as bonds, equities, property trusts etc. These different options have different growth and risk profiles. Where there is a default option, people tend to stick with it. This may be partly due to inertia, but it might also imply that the default option is the one endorsed by the employer as appropriate for employees (Madrian and Shea 2001). If there is no default, people use very simple heuristics – if there are two options, most will opt for a 50:50 split (Bernatzi and Thaler 2001). Once a selection has been made, it is retained – people do not apply portfolio theory to actively manage their investments. For example a study of a major US retirement fund found that the median number of changes in asset allocation over the lifetime of an individual account was zero, even though the alternative assets grew at very different rates (Samuelson and Zeckhauser 1988).

There is no better illustration of the importance of heuristics and behavioural anomalies in guiding real decisions than the fact that the pioneer of modern portfolio theory, Nobel Laureate Harry Markowitz, himself

simply divided his own retirement savings 50:50 between bonds and equities, in order to minimise any future regret (Zweig 2007).

6.2 Choice overload

As tasks become more complex people are more likely to procrastinate (Tversky and Shafir 1992; Shafir et al. 1993) or just keep doing what they are doing (Heiner 1983). A contributing factor to complexity is the number of choices on offer. More choice offers benefits, as it improves the set of potentially good options; providing search costs are minimal, more choice should never be a bad thing. However, there is growing evidence that too much choice is costly to human decision-makers. The greater the range of options, the greater the chances of overlooking the best option, and since potential losses weigh more heavily than potential gains, this can make for a fearful decision-maker.

A series of experimental studies by Iyengar and Lepper (2000) show that people faced with a large variety of choices are less likely to come to a decision, and those that do tend to be less happy with it, than people offered a narrower range of options. One of these experiments involved setting up a display of jams inside a food shop, with either 6 or 24 different jams displayed. While people were more likely to go over to the display with 24 jams, they were actually less likely to make a purchase. In a laboratory setting participants selected a chocolate from either 6 or 30 options. A survey revealed that those with the more limited choice were more satisfied with their decision than those with the more extensive choice. In a third experiment students were more likely to complete a voluntary assignment when offered 6 possible topics than 30. Those with the extensive choice also wrote poorer essays, suggesting they had chosen the topic less carefully, and had perhaps subsequently felt uncertain about their choice (Iyengar and Lepper 2000). Extensive choice problems may be mediated through the use of intermediaries (such as department stores) to limit the choice set or experts to make the decision (see Earl and Potts 2004).

Excessive choice also impacts on major decisions. Enrolment in US pension plans is higher where employees are given fewer options from which to choose (Sethi-Iyengar et al. 2004). Bertrand et al. (2006) conducted a field experiment in South Africa on the decision to take up a loan. People were sent letters offering large, short-term loans at random interest rates. The letters had either one or four examples of loan sizes and terms along with their respective monthly repayments. More people took up the offer in response to the single option letter than the four option letter – it had the same impact on take-up as dropping the interest rate by 2%. In the Swiss health insurance market the greater the choice of funds on offer the more likely people are to stick with the status quo (i.e. not switch funds), even though those who did make a change were able to save money (Frank and Lamiraud 2009). Clearly increasing choice can have adverse effects, in part because it results in greater complexity which can disrupt the decision-making process.

6.3 Uncertainty aversion

People are uncomfortable with uncertainty. They can be reluctant to make decisions when they know they do not have full information, even if the information they lack is not actually relevant to the decision (Shafir et al. 1993). They can even be willing to pay to resolve such extraneous uncertainty (Shafir et al. 1993). However, having sought additional information people then tend to give it more weight than it merits. In experimental scenarios medical professionals often sought to fill in missing information (by calling for more tests), which seems reasonable enough. Having obtained the extra information they were then far more likely to be swayed by it over other conflicting information than were a parallel group who had all of the information from the start (Redelmeier et al. 2001).

Uncertainty (which is ubiquitous in real world decisions) therefore provides a further reason for procrastination and delaying decisions. It can also prompt people to expend resources seeking additional information which may even worsen the quality of subsequent decisions. In terms of the tax and transfer system, this may mean that citizens put off making a decision or procrastinate, rather than methodically working out what they are entitled to. People vary in their tolerance for uncertainty – those who cope with it

better prove far better at complex decision-making (Endres et al. 2009). This means that complexity, and the uncertainty it causes, can be expected to disproportionately affect certain people, which will perhaps be those most in need of assistance from the tax and transfer system.

Unfortunately the decisions which matter the most in life, such as selecting medical treatments or investment strategies, are often those which people are least equipped to make (Kunreuther et al. 2002) (and are the most difficult to study, especially in the laboratory). As well as being complex, the ramifications of poor decisions are significant, and often frightening. Most people rarely make such decisions, so they lack experience and have little opportunity to refine their decision-making procedures. They are therefore particularly likely to follow the strategies used by others, or recommended by experts. Some decisions around tax may fit within this category of rare, complex and significant – the consequences of a bad tax decision range from financial loss to imprisonment. While imprisonment is extremely unlikely, the sanctions surrounding the tax system, along with its complexity, are likely to make many people apprehensive about tax decisions.

Note that it is the combination of complexity and importance which matters – crossing the road is a very significant decision, but is generally not complex. For more complex decisions such as driving a car, experience is gained through tuition, only after which do people feel confident to make their own decisions. Tax decisions are made only once a year for most people, and there is no formal tuition. They are dealing with a complex environment in which they start out with no experience. It is therefore perhaps not surprising that some people seek to avoid the decision altogether (i.e. just not doing tax returns), or incur the expense of engaging a tax agent. People will also want to be certain that if they are audited their affairs are in order. The international literature suggests that people's primary motivation for using a tax professional is that it provides certainty that their tax return is correct (see Tan 1999). They are likely to feel more certain if they use a tax professional than if they attempt to do it themselves, particularly if their situation is relatively complex (even though error rates are not necessarily different). It is notable that tax advisors promote certainty in their marketing campaigns.

7. APPLYING THESE INSIGHTS

7.1 Nudges

While people are not optimising machines, their behaviour is predictable, even (and perhaps especially – see Heiner 1983) when it departs from economic rationality. These insights have long been used in marketing to guide consumers towards particular purchases. The same insights can also be applied in public policy to guide individuals towards better choices. Thaler and Sunstein (2003, 2008) argue for the use of ‘choice architecture’ to nudge people in beneficial directions without restricting freedom of choice. The environment in which people make decisions is shaped, for example through the amount of, and order in which, information is presented and by the use of defaults. Designing the decision environment to account for human behaviour can have a significant impact on decisions.

It is of course a fine line between guiding people’s decisions and manipulating them. Thaler and Sunstein consider their approach to be ‘libertarian paternalism’, as it aims to promote people’s best interests, but at the same time always allows them to make an active choice if they wish. An example of this is automatic enrolment in retirement saving plans for American workers. It is known that many people do not enrol in these plans, even though it is generally in their interests to do so. Having enrolment as the default increases participation, while at the same time those who genuinely do not wish to participate have the option to withdraw from the scheme. Automatic enrolment has a particularly marked impact on relatively disadvantaged groups, and serves to reduce demographic variation in participation (Madrian and Shea 2001).

7.2 The power of defaults

Defaults therefore offer a powerful policy tool which can achieve positive outcomes, particularly among disadvantaged groups, at minimal cost and without restricting freedom of choice. However, as with any powerful tool, they must be applied with care. Given there is a strong chance that a person will stick with a default, particularly if it is apparently endorsed by the government or their employer, defaults can have adverse consequences if they are not genuinely the best option for that person. For example, while saving for retirement is beneficial for the vast majority of workers, how much they should contribute to their plan (i.e. superannuation in Australia; 401(k) in the US) and how it should be invested (e.g. fixed interest vs shares) is likely to vary with individual circumstances and preferences. While automatic enrolment increases participation in 401(k) it also causes people to stick with the default contribution rates and asset allocations (Madrian and Shea 2001; Beshears et al. 2006), so while it is good for those who would not otherwise have enrolled, it may not be so good for those who would have enrolled anyway but might otherwise have given more consideration to the details of their investment.

Defaults work best where people are homogenous in their preferences and circumstances, and have relatively limited decision-making expertise (Choi et al. 2003). In such cases if an optimal option can be identified it would make a good default. If people are more heterogeneous, any default is likely to be sub-optimal for a greater proportion of them, in which case it may be better to prompt people to make their own decisions (Choi et al. 2003). ‘Active decision-making’ can avoid the drawbacks of defaults without the risk of procrastination (Carroll et al. 2009). In the case of 401(k) plans, new employees may be required to indicate whether or not they wish to enrol, and their desired contribution rates and asset allocations. This leads to higher enrolment than an opt-in system (in which the default is non-participation) while maintaining similar contribution rates (suggesting that the forced decisions are not being made randomly) (Carroll et al. 2009).

7.3 Overcoming procrastination

The ‘Save More Tomorrow’ program developed by Thaler and Benartzi (2004) provides a particularly good example of behavioural economics in action. It recognises that many people may be saving less than is

optimal. Simply telling people this and encouraging them to save more is likely to be ineffective due to hyperbolic discounting, in which the immediate impact of reduced consumption will be overweighted. Instead people are encouraged to pre-commit a portion of their next pay rise to a savings fund. This proves psychologically far easier than facing an immediate decline in consumption. While the pre-commitment is not binding, once it has been made procrastination and inertia (now being harnessed for good!) mean that people are likely to stick with it. The pre-commitment becomes the status quo, and any reduction in contributions from that level may be perceived as causing a loss to future retirement income.

The Save More Tomorrow program has proved very successful at raising people's retirement savings without the need for any compulsion or additional incentives. In its first implementation, most of those offered the plan chose to join and remained in it over several years. Their average savings rate increased from 3.5% of salary to 13.6% in just over three years (Thaler and Benartzi 2004). Subsequent implementations have also had positive impacts, and the program has now been adopted by thousands of employers in the US and beyond (Thaler and Sunstein 2008).

7.4 Channelling decisions

'Channel factors' can guide behaviour by facilitating particular actions towards a goal, or removing barriers (Lewin 1951). Channel factors were demonstrated in a study of responses to a vaccination program (Leventhal et al. 1965). A communication campaign proved effective at improving knowledge, but very few people actually followed through by going for a vaccination. However, including a map with directions to the health centre and its opening hours greatly increased the number of people who followed through by getting vaccinated. This study demonstrates that when seeking to promote behavioural change it is important to make it easy for people, and to remove any barriers (whether real or perceived) which may block the behaviour. The details of programs matter, particularly those aimed at disadvantaged groups for whom barriers can be more difficult to surmount (Bertrand et al. 2006).

In the case of retirement savings, rather than presenting people with a mass of complex information they can instead be channelled through the process. 'Quick Enrolment' has been developed to facilitate participation in 401(k) plans (see Beshears et al. 2006). Rather than having to decide whether or not to participate, how much to contribute and how to allocate it among investment classes, people are offered a 'quick' option of enrolling with a default rate and asset split (other options can still be available for those who wish to take them). Trials of this program significantly increased the proportion of new employees participating in a 401(k) plan, and also brought in many existing employees who were not previously participating (Beshears et al. 2006). This program works by separating the decision of whether or not to participate (which should be straightforward) from decisions about how much to invest, and in what asset classes (which is more complex for most people). It will be particularly effective with the least financially sophisticated people, for whom the complex decisions present more of a barrier. However, it does result in more people sticking with the default investment options.

Public policy should also recognise that more choice is not always better for people, particularly those who struggle with complex decision-making (Fear 2008). It will often be better for all concerned if people are initially presented with a limited number of options, perhaps with more available for those who are motivated to seek them out. Similarly for information, more is not necessarily better. The more additional information people are provided with, the more likely they are to disregard the whole lot. Disclosure laws should require information to be presented clearly and concisely, allowing people to readily compare different products and options without sowing confusion. Deadlines are also important – if they are too short they can be a barrier, but if they are too long they may simply promote procrastination. People are actually less likely to respond to surveys with more distant deadlines (Tversky and Shafir 1992). This means that government programs, and particularly those targeted at disadvantaged people, must be as simple as possible for people to engage with. Where multiple decisions are required people should be led through them sequentially, rather than required to make them simultaneously.

7.5 Helping people to help themselves

People are creatures of habit, particularly when faced with complex scenarios. Initially they will make a complex decision by following others or applying heuristics from elsewhere. Attention should be paid to helping people choose the most appropriate decision-making strategy rather than just to execute it. Having made a decision once they are likely to keep doing the same in the future, unless it is clearly not working out for them. In terms of helping people make good decisions, providing large amounts of information in advance may be less valuable than providing clear and simple feedback on the outcomes of decisions. If someone does not receive any feedback they have little reason to change their behaviour. In fact, they are likely to convince themselves that the decision they made was actually correct (see Egan et al. 2007).

In terms of tax, this could mean that having once gone to a tax agent, people are likely to keep on doing so. As most people receive no feedback at all about their tax return (other than what is owed or refundable), they have no way of knowing whether their decisions were appropriate, and whether they could be improved in the future. While there are costs associated with using a tax agent, these may be rendered less salient if considered together with the tax refunds which most people receive. In many cases people do not pay the fee directly, but rather it is deducted from their tax refund, which is paid directly to the agent by the Tax Office. This further reduces the salience of the fee to the client, as it represents a foregone gain rather than a loss, even if the client is aware of what the actual fee is. Ensuring that clients are fully aware of the fees they are paying should help them better decide whether it is really a worthwhile investment for them.

It should also be noted that tax agents have a clear incentive to make the process appear complex to the client, so the client perceives they are getting a more valuable service and to make them more likely to come back next year. Tax professionals may also feel the need to find as many deductions as possible in order to justify their fees. With increasing complexity there is greater scope for professionals to exploit the tax law (see Tan 1999). While their clients are often seeking certainty, international studies have found that non-compliance can actually be higher in tax returns prepared by professionals (e.g. Klepper and Nagin 1989).

Training and experience can mitigate some of the behavioural and psychological anomalies which characterise human decision-making. For example, as described above, professional traders do not show the endowment effect and are more rational (though still not fully rational) share traders. Provided people are receiving salient feedback, their decision-making should improve with experience. However, some behavioural biases are likely to reflect underlying preferences, which it is neither possible, nor desirable, to overcome through training. Programs need to be designed to take into account these common behavioural factors.

7.6 Electronic service delivery technologies

Electronic Service Delivery (ESD) technologies encompass the specialisation and application of Information Technology (IT) to the delivery of services, and the analysis tools and techniques that may be applied when formulating a service (or systems of services). As electronic technologies evolve, they present new communication channels (such as social networking platforms), as well as new approaches that can be taken using established channels.

For the application of ESD specifically to the personal taxation system, the Australian taxpayers' acceptance of desktop applications (eTax) and the conventional world-wide-web medium are clearly established by the current national experience. Online social networking platforms (wiki, blogs and Twitter and so on) are used by leaders and governments for interaction and communication with citizens: overseas, e.g. see New Zealand Government (2007); and Australia, e.g. <http://blog.training.gov.au/> and <http://twitter.com/premiermikerann>. Beyond these information dissemination and feedback functions, the delivery of complex and highly structured services (like taxation), using the newer platforms, does not appear sought-after at present. A recent survey-based research by Messinger et al. (2009) suggests that while the users of virtual worlds (such as *Second Life*) view the delivery of certain commercial services as feasible and/or desirable within those worlds, (real world) tax preparation was rejected as unsuitable by most respondents.

Zack (2007) provides a framework for understanding when technology might best assist in service provision. He emphasizes indeterminacy in information and knowledge, and defines four categories of indeterminism:

1. Uncertainty: not having enough information;
2. Complexity: having more information than one can easily process;
3. Ambiguity: not having a conceptual framework for interpreting information;
4. Equivocality: having several competing or contradictory conceptual frameworks.

Interpreting Zack’s arguments in the context of service delivery, the proposition is that electronic systems come into their own when information is the issue (uncertainty and complexity).

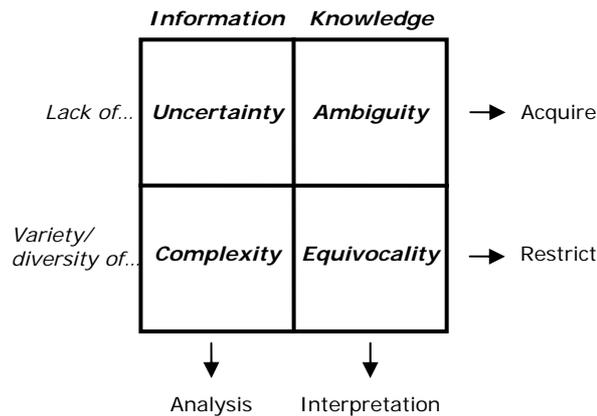


Figure 1. Indeterminacy categories and general strategies (from Zack 2007)

Of equal relevance is the idea that knowledge-based indeterminism requires *interpretation* and/or *knowledge acquisition* (refer Figure 1). Zack argues that human contact is best in situations where knowledge² is the issue (ambiguity being an absence of knowledge, equivocality being conflict in knowledge): “*Ambiguity is not resolved by gathering more facts. It typically requires cycles of interpretation, explanation and social ratification... Ambiguity and equivocality are best managed by face-to-face communication among a network of personal contacts that serves as a source of knowledge and expertise ...*”

If we accept this argument, the implication is that electronic service delivery might not satisfy taxpayers in cases where they perceive conflict (correctly or incorrectly) between legal, logical, equity-oriented or ethical frameworks that may exist within or external-to the taxation system. So, while the strong opportunity exists to use ESD technology to “simplify the complex” and remove uncertainty (with benefits as discussed in section 5), as well as reduce barriers to engagement (refer section 7.4), there is less support for its utility in dealing with knowledge indeterminacy.

The work by Barkhi et al. (2004) is relevant in this context because it demonstrates, experimentally, the usefulness of information technology in assisting with uncertainty and complexity management. Barkhi et al. also establish (for group decision-support applications) that there is a strong interaction between the support technologies, groups’ incentive structure and the communication mode (face-to-face or distributed). This suggests that the success of ESD technologies in a reformed tax service-delivery system may strongly depend not only on the technologies and the mixture of electronic and personal communication, but also on the incentives presented to the participants.

Participants’ expectations and desires, for change and innovation, are also influential. Nevo and Chan (2007) view the problem of customers’ satisfaction with electronic technologies from the perspective of expectation-confirmation theory, which originates in the field of marketing. Nevo and Chan study enterprise

² The definition of “knowledge” in the context of Zack (2007) differs from that presented in other parts of the literature, where we may instead find a distinction between “factual knowledge” (approx. equivalent to Zack’s “information”) and “tacit knowledge”.

Knowledge Management System (KMS) purchases, and observe that the process of (dis)confirmation of expectations and desires, and hence satisfaction, is time-dependent and hard to evaluate because of purchasers' typical familiarity with only the broad intentions of the software. Although a quite different context, this is relevant to innovations in personal tax service delivery because we would expect vagueness in typical customers' desires and expectations of these innovations. Nevo and Chan advise that: "... organizations can overcome this challenge by providing more support to the desires translation process. More generally, organizations can be more proactive in creating appropriate expectations and desires within different stakeholders".

Classifying customers and their requirements is an established concept in customer relationship management, marketing and service delivery. Shaw et al (2001), for example, survey the means, opportunities and challenges for data mining in knowledge-based marketing: their analysis being pertinent for customer profiling in a general sense. Raghu et al. (2001) consider the case where a vendor is faced with the problem of customizing product offerings for a customer. Raghu et al. note that technological advances have made it possible for businesses to track individual customer preferences, and make sense of the gathered data. Their work demonstrates the appropriateness of mathematical and statistical modelling for customer grouping. Yang and Chung (2004) study an automated financial news intermediary system associated with the Hong Kong stockmarket. They demonstrate that well-informed "static" user profiles bring good initial performance, yet combining user profiles and user feedback enables (automated) learning and refinement over time, leading to maximum precision in customized information filtering and presentation.

Whichever approach is used, the ability to efficiently profile and classify customers leads naturally to the development of service processes and/or interfaces that are specialised to particular customer groups. With the "power of defaults" (section 7.2) in mind, this motivates the dynamic setting of default options, based on customer profiles, so as to extend the degree to which we can use the defaults mechanism to guide and simplify. Similarly, in complex situations, combinatorial optimisation (Operations Research) methods can be used to distil a bewildering range of options into a prominent few, promoting optimising behaviour (see section 5.2) by avoiding "choice overload" and "uncertainty aversion" (sections 6.2 and 6.3). The technical capability to do this is well established in business decision-making. The application of these methods to customized service delivery is more novel but certainly not unknown: for example, Dunstall et al. (2004) apply optimisation techniques to reduce an exponentially-large set of travel possibilities into a small number of high-quality candidate itineraries for holiday travel (based on user profiles and catalogued travel product data), prior to a user being prompted to select a favourite itinerary.

8. SOME THOUGHTS FOR THE AUSTRALIAN TAX AND TRANSFER SYSTEM

Previous sections of this report have reviewed key findings from the behavioural economics literature and discussed some of the ways in which they are applied to improve public policy. This section speculates on how those insights might be put into practice to improve the Australian tax and transfer system. Given that most decisions are based on simple rules rather than optimisation, incremental changes to a complex system will not necessarily lead to incremental changes in behaviour. Most people will not even notice the changes, and will stick with their decision-making heuristic. Others will be misinformed, as they are more likely to rely on friends and media reports than seek out official information sources.

If a policy objective is to achieve a broad-scale change in behaviour it will be necessary to make substantial changes to the way in which people approach the decision. This does not necessarily require substantial changes to policy – in some cases relatively minor changes may have a significant effect on behaviour.

8.1 Remove the burden of complexity from most individuals

Completing an individual tax return is a complex and time-consuming process. It is at best a chore and at worst a source of anxiety for individual tax payers. Large numbers of people (around 74%) incur the expense of a tax agent (\$100+) even though their tax affairs may be relatively straightforward. Initiatives such as eTax assist people to do their own tax returns, and to some degree guide them through the process. Take-up is still limited as most people will stick with their previous habits. Even if the tax system is simplified and eTax further enhanced, it is unlikely that many people will actively review their decision to use a tax agent.

However, with some relatively minor modifications to the system, the way in which individuals make these decisions can be turned around. Information on income is increasingly available to be pre-filled into tax returns, along with other information on family circumstances etc. through Centrelink. Instead of expecting people to seek out tax forms and work out how to complete them, individuals could be sent forms (either paper or electronic) with available information pre-filled. This would represent a default tax return. People would simply need to check that their circumstances are captured correctly, and they may be required to declare that they have no other sources of income. If they agree with their assessment they could simply sign the forms and return them to receive their refund. This would remove the need for most people to use a tax agent without creating additional uncertainty.

Those who wished to claim additional deductions, or declare other sources of income, could still do so through filling in additional information. Individuals' tax affairs could still be as complex as they need to be, but without forcing everyone to go through the same complicated process. This approach could particularly assist those new to the tax system – initially their affairs are likely to be simple, so they would have little to do, but they could gradually engage more as their circumstances change. It is likely that many people would stick with the default, which means they could miss out on some eligible deductions. However if it also saves them the expense of a tax agent many would still come out ahead. A default system would work particularly well if the range of deductions and offsets were significantly cut back (perhaps with some sort of default deduction allowance).

This approach could be taken a step further by removing individual tax returns altogether for most individual tax payers. People could simply be mailed their annual assessment along with a refund cheque or payment request. Those with more complex affairs could still choose to provide a more detailed return or consult a tax agent if necessary. By changing the default from requiring all taxpayers to actively complete a tax return to providing a pre-filled version, overall compliance costs would be significantly reduced. Any such change would need to be made obvious to people, for example by actually sending the pre-filled form to them rather than inviting them to apply for it or look for it online. Clearly stating their default refund would also make it clear to those who continued to use a tax agent exactly what the costs and benefits of the agent are to them (i.e. the change in their refund versus the fee).

8.2 Complexity and non-lodgement

It is notable that significant numbers of taxpayers (over one million) fail to lodge a tax return. Many of those are on low incomes, and have also failed to lodge in previous years (Colmar Brunton 2008). Interestingly, more people say they intend to lodge a return than actually lodge a return, suggesting that many are simply not getting around to it, rather than evading it. Survey results indicate that many non-lodgers do not realise they are required to lodge a tax return, while others don't get around to it or find it too complicated (Colmar Brunton 2008). Overall it appears that for a significant number of people (in the 100,000s) failure to lodge is not premeditated, and is more likely to be due to procrastination and confusion than attempted tax evasion. Having missed lodgement once, even unintentionally, people will then face an additional psychological barrier in future years.

It is likely that many non-lodgers, especially those on low incomes, are actually missing out on refunds and benefits. Those for whom the complexity of the system represents the greatest barrier and are most likely to make poor decisions, are often among the most disadvantaged in society. These people stand to gain the most from policy 'nudges' such as defaults and pre-filled forms, which can also reduce the administrative burden of dealing with non-lodgers. Providing reminders and additional support may help prevent those who have missed a single return from making a habit of it. If default tax returns are not adopted, consideration should be given to other mechanisms to remove the barriers faced by individuals. For example, people typically come into the tax system at around the age of 17 with no experience. If people can be introduced to the tax system gradually they could build up their experience without becoming reliant on tax agents.

8.3 Complexity as a barrier to equity

Complex decision-making is likely to impose a relatively greater burden on those with less experience and education. Young people, people with limited education or cognitive capacity and people with limited social networks are likely to be the least well equipped to deal with complexity. By contrast those who know more, and have access to professional advice, are in a far better position to take full advantage of the system. Increasing complexity therefore has the potential to accentuate existing inequalities. Given many of the complexities of the Australian tax and transfer system are intended to address inequity, this represents a significant problem.

Delivering welfare through a complex tax system may therefore be self-defeating, as many of the people at whom it is targeted are the least well placed to access it. For example, receiving the superannuation co-contribution requires knowledge of the scheme and making a pro-active contribution to an eligible fund prior to a June 30 deadline. This is something that many human decision-makers will struggle with.³ More needs to be done to overcome the barriers of complexity and behavioural inertia if such schemes are to work for those who need them the most. The benefits need to be made more salient, and the additional contributions spread through the year. Such a scheme may benefit from the Save More Tomorrow principles, through encouraging people to pre-commit relatively small sums from future income rather than relying on a single investment prior to a June 30 deadline. Similar issues may apply with the new education tax refund. Like the super co-contribution, it is claimed retrospectively, and is again likely to be missed by many of those for whom it would be most useful.

Complexity may also present a barrier, with a disproportionate effect on the least empowered, to accessing Centrelink payments. While, unlike the tax system, Centrelink provides staff to assist clients to access their entitlements, complexity will still have a significant impact. The burden of complexity largely falls on staff, and leads to higher workloads and error rates which can impact on clients' ability to access their entitlements (see UQ 2005). The existence of a market for advice on Centrelink entitlements and procedures suggests it is an issue for clients (and is itself an indictment of the perceived complexity of the Centrelink system).

³ A straw poll of one of the author's networks indicated that most of those who qualify for the super co-contribution did not know about it (and this is something that cannot be accessed retrospectively through seeing a tax agent at tax time). Those who did access it were partners of higher income, more financially sophisticated people.

Complexity may dissuade people from applying or from finding out whether they are entitled to a benefit. Procrastination may be particularly problematic where people believe their current circumstances are only temporary, as will be the case for many Centrelink clients.

8.4 Complexity and consumer protection

The more complex the system the more dependent people are on professionals, which in some circumstances may make them vulnerable to bad advice. Tax complexity can also create barriers to investments for those who do not understand it. For example, share ownership significantly complicates individual tax returns, both with dividends and capital gains. This may prompt many less sophisticated people to use financial planners, some of whom have conflicts of interest. There have been a number of high profile cases where professional advisers have encouraged naïve investors into highly unsuitable investments. While it may never be possible to stamp out such practices, a simplified tax system would reduce the costs and risks to people of taking full charge of their own affairs.

Some high risk investment schemes have been marketed specifically for their supposed tax advantages. For some people minimising tax seems to become an end in itself, and tax deductible losses are actively sought. It may be worth considering ways in which people could be presented with clear and concise summaries of the ongoing effectiveness of these schemes. Making it clear to people that a tax deductible loss is still a loss may help to improve their decision-making!

Any regulation aimed at protecting consumers (whether related to tax, or more generally) needs to consider how people respond to complexity (i.e. they generally ignore it and hope it goes away). For example, the Product Disclosure Statements required for financial products, while ostensibly for consumer protection, are actually more likely to have the opposite effect. People are presented with a lengthy legalistic document which they almost certainly will not read, and if they did they would not understand it. A better approach is to mandate clear and concise disclosure of salient features, such as upfront and ongoing fees, along with concise explanations of their meaning. This is done in some areas, for example ‘comparison rates’ on loans (although in this case no explanation is given, so many people do not understand them).

8.5 Improved service delivery

Where complexity is unavoidable, proceduralisation (breaking the decision process down into a series of discrete steps) is required for effective decision-making. As observed in section 7.6, Information Technology provides many opportunities, including channelling people through complex decisions in a step by step manner (as eTax does to a large extent) and forming decision options in a dynamic, customer responsive manner. While online delivery has great potential for the tax and transfer system, it will also be worth considering potential barriers. For example, not all have reliable internet access, and many may be reluctant to enter personal information online. These aspects should be further explored (if they haven’t been already) before committing to any particular policy path.

There is a great opportunity to collect empirical evidence on how people interact with the tax and transfer system in order to better inform future policy and service delivery approaches. Proposed changes, particularly around the way in which services are delivered, can be tested, initially in laboratory studies and subsequently in pilot trials. This would enable alternative approaches to be directly compared, which could provide a great benefit to future policy. Medicine provides a template for this, with new products initially tested in very controlled conditions, and those that prove ‘safe in the laboratory’ proceeding to field trials with a few hundred or thousand patients. There are processes to ensure ethical standards and statistical rigour are met throughout. The usefulness of innovation in service delivery mechanisms is that it can provide a practical means of delivering the policy nudges which are simply not available using existing methods and channels.

8.6 A simpler tax system

The large number of offsets and deductions in the current tax system to some extent reward people for complexity – the more complex their affairs, the more things they can claim. It may also affect the way people go about their tax returns. The more deductions and offsets are available, the more people will feel they should be claiming at least some of them. Rather than being a simple exercise in compliance, many people are likely to see it as a search for allowable deductions – in behavioural economics terms, this is a framing issue. A simpler system, providing it is not perceived as inequitable, may prove better able to focus people on simple, compliance-oriented, decision-making.

While simplicity is desirable, it should be noted that it is not likely (nor appropriate) for the tax system to be reduced to a truly simple decision. Human decision-makers have a relatively low ‘complexity threshold’ – once more than three or four attributes are involved, a decision is no longer simple. Rather, the tax and transfer system should be kept as simple as possible, with a particular focus on reducing uncertainty and making relevant information salient. Greater use of defaults can reduce the burden on most taxpayers without restricting their choices. Well designed service delivery technology can be applied to channel people through the process in a simple manner, and offer default options which match their circumstances without reducing the choices available to them. A desirable goal would be to have a tax and transfer system that is suited to human decision-makers, not their tax agents.

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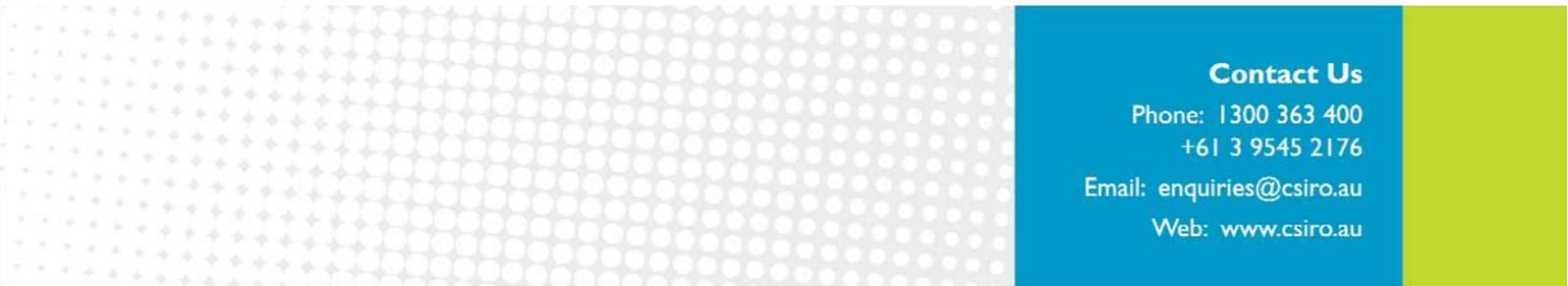
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