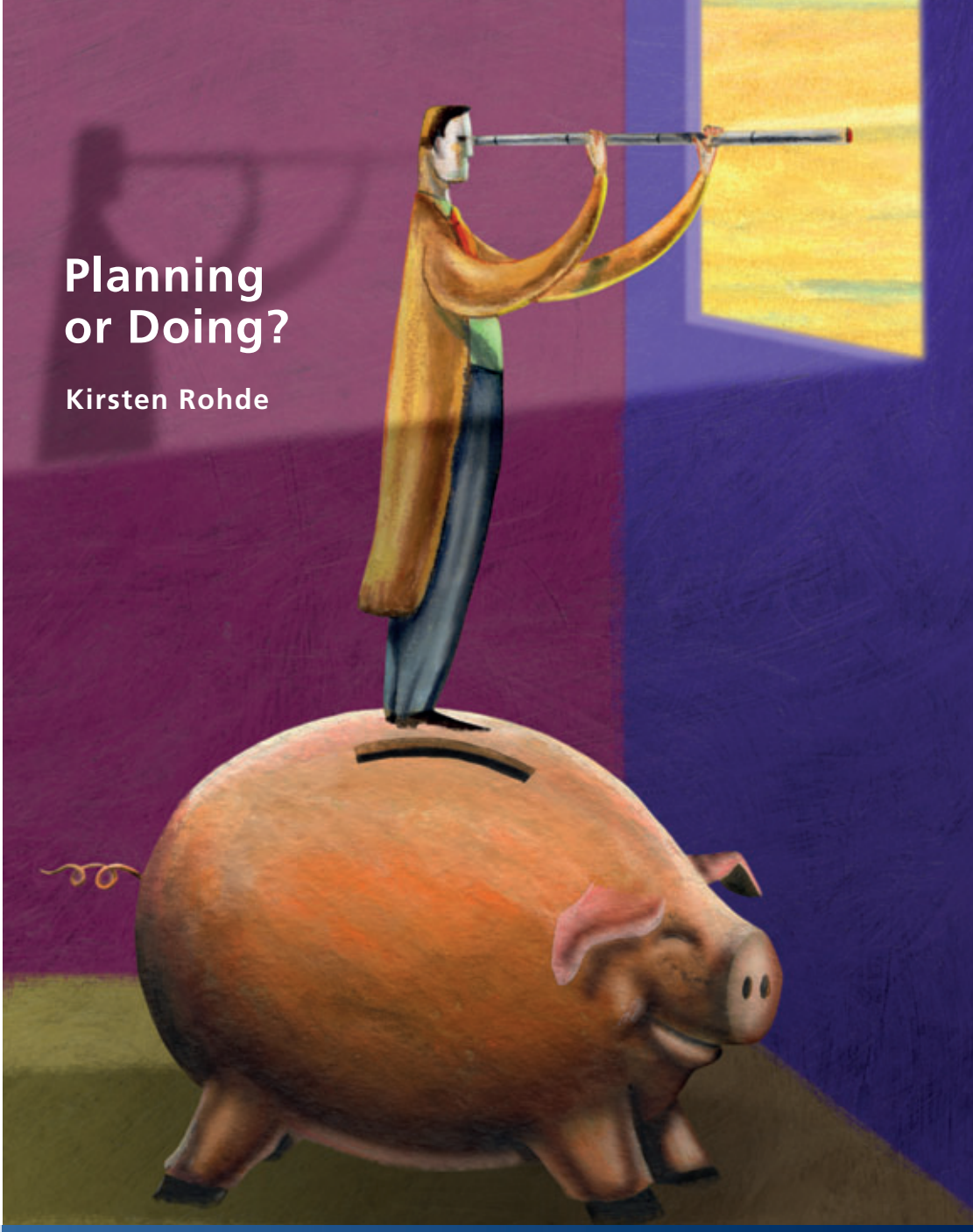
Planning or Doing?

Kirsten Rohde



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Planning or Doing?

Address delivered at the occasion of accepting the appointment of
Professor of Behavioural Economics with a focus on Intertemporal Choice
at the Erasmus School of Economics, Erasmus University Rotterdam,
on Friday, May 9, 2014

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Samenvatting

De vergrijzing en de recente financiële crisis zetten ons systeem van sociale zekerheid onder druk. Er is een tendens om de verantwoordelijkheid voor toekomstig inkomen en gezondheid steeds meer bij individuen te leggen. Men kan zich echter afvragen in hoeverre individuen in staat zijn om deze verantwoordelijkheid te dragen. Klassieke economie gaat uit van volledig rationele individuen. Onderzoek uit de psychologie en andere sociale wetenschappen laat echter zien dat mensen systematisch afwijken van rationaliteit. Een voorbeeld is de kloof tussen plannen en doen. Velen van ons stellen investeringen voor de toekomst herhaaldelijk uit. Voorbeelden van zulke investeringen zijn meer gaan sparen voor ons pensioen, stoppen met roken, en naar de sportschool gaan. Een dergelijke psychologische neiging tot uitstelgedrag maakt het lastig voor mensen om de verantwoordelijkheid te dragen voor toekomstig inkomen en gezondheid.

Gedragseconomen verrijken de economische wetenschap met inzichten uit de psychologie en andere sociale wetenschappen. Ze weten daardoor op welke manier mensen afwijken van de klassieke rationele economische modellen. Deze kennis kan gebruikt worden om beslissingsomgevingen te creëren die mensen helpen bij het dragen van de verantwoordelijkheid voor hun eigen toekomst. Libertair paternalisme draagt 'nudging' aan als een instrument om die omgevingen te creëren. Een 'nudge' is een subtiel duwtje in een bepaalde richting waarbij mensen de vrijheid behouden om van die richting af te wijken. Om 'nudging' daadwerkelijk te implementeren moet men weten wie men gaat 'nudgen', in welke richting men gaat 'nudgen', en hoe men gaat 'nudgen'. Gedragseconomie geeft antwoord op deze vragen.

Abstract

The ageing of society and the recent financial crisis have put pressure on our system of social security. There is a tendency to shift part of the responsibility for future income and healthcare from the social security system to individuals. Yet, one may wonder to what extent individuals can bear this responsibility. Classical economics assumes that people are perfectly rational. However, research in psychology and other social sciences shows that people systematically deviate from rationality. One example is the gap between planning and doing. Many of us repeatedly postpone investing in our own future such as saving more for our pensions, quitting smoking, or going to the gym. Such a psychological bias makes it difficult for individuals to bear the responsibility for their own future income and health.

Behavioral economists enrich economics by using insights from other social sciences such as psychology. They, thereby, know how people deviate from the classical rational economic models. This knowledge can be used to design decision making environments, which help people take responsibility for their own future. Libertarian paternalism proposes nudging as a tool to create such environments. A nudge is a subtle push into a particular direction and leaves people the freedom to deviate from this direction. In order to implement nudging, one needs to know whom to nudge, in which direction to nudge, and how to nudge. Behavioral economics provides answers to these questions.

Content

1. Introduction

Dear Rector Magnificus,
Dear board members of the Vereniging Trustfonds,
Dear colleagues, students, friends, and family,
Dear distinguished guests,

Congratulations! You had planned to attend this lecture and you have made it. There may be others who had also planned to be here, but failed to carry out their plan. Or had you actually planned to do something else in the coming hour, and did you deviate from that plan?

Many of us regularly fail to carry out our plans – we suffer from a gap between planning and doing. Examples are our plans to go to the gym, to stop smoking, and to get up early. Time-inconsistencies, reflected through this gap between planning and doing, can impose large monetary and non-monetary costs on individuals and society. For example, monetary costs arise when self-employed people fail to carry out their plans to start saving for their pensions. Non-monetary costs arise if people fail to adhere to a healthy lifestyle, resulting in obesity, and the corresponding health risks. In the next 45 minutes, I would like to share my views with you about the reasons for the existence of the gap between planning and doing, and about ways to reduce this gap.

The gap between planning and doing is an example of a psychological bias, a systematic deviation from rational behavior. Classical economics assumes that individuals are perfectly rational. Behavioral economists improve the predictive power of economics by incorporating insights from other social sciences such as psychology and by thereby making more realistic assumptions about the behavior of individuals. As a behavioral economist with relatively broad interests, today I am going to focus on the gap between planning and doing.

First of all, it is important to note that the gap between planning and doing is not necessarily irrational. If we deviate from our plans because we have new and relevant information, which puts our plans in a different perspective, then it may actually be wise and rational to change our plans. Yet, if we deviate from our plans merely because we have changed our minds as time passes by, then this deviation may not be rational.

Imagine you were planning to go to the gym tomorrow morning. If you eventually decide not to go because you got injured yesterday, then it may be

wise to take it easy tomorrow. Yet, if you decide not to go merely because you do not feel like it, the rationale for taking it easy tomorrow is less clear, and it may eventually result in never going to the gym.

Research in psychology and economics has shown that we often deviate from our plans without good reason. The gap between planning and doing, which results from such deviations, has a negative impact on our wellbeing. This suggests a need for policies to reduce this gap. Designing such policies is one of the challenges for behavioral economists. I would like to discuss this challenge and how we can respond to it.

2. The gap between planning and doing

The gap between planning and doing is particularly visible in New Year's resolutions. Around New Year many of us have good intentions for the coming year and we plan to change our behavior. Think, for instance, of our plan to quit smoking, to go to the gym more often, or to spend more time with friends. Yet, many of us fail to carry out these plans and are back to our usual behavior after only a few weeks.

DellaVigna and Malmendier (2006) give an example of a gap between planning and doing which does not only arise around New Year. They analyzed gym attendance of members from three US health clubs and showed that members who pay a flat monthly fee could on average have saved more than $7 per visit to the gym by using a ten-visit pass instead of the monthly contract. These members had probably planned to go to the gym more frequently than they actually did.

Moreover, members with the monthly, automatically renewed contract were 17 percent more likely to stay enrolled after one year than members with a yearly contract which expired automatically. This was the case even though the members with the monthly contract paid more for the right to cancel their subscription at the end of each month. Members with a monthly contract who planned to quit probably postponed cancelling their subscription, and thereby failed to quit. This example shows that the gap between planning and doing can impose unnecessary costs on individuals.

This gap between planning and doing is known as time-inconsistency. Time-inconsistency is a psychological bias which makes it tough for people to bear responsibility for their own future. Yet, part of the responsibility for future health and income is currently being shifted from governments, pension funds, and insurance companies to individuals.

In light of the ageing of society and the current financial and economic crisis, social security and healthcare systems can no longer be expected to fully insure individuals against the financial and health risks of becoming older. The shift of responsibility to individuals makes it increasingly important to understand how people take their own future into account when making decisions, and which psychological biases could prevent them from making optimal decisions.

Behavioral economists help to develop decision making environments that make it easier for people to bear this responsibility. Developing such environments is also called choice architecture.

3. Commitment devices and nudging

One example of a tool designed to help people bear responsibility and carry out their plans is 'Clocky'. Many of us set an alarm clock to wake us up at a particular time in the morning. Yet, when the alarm goes off, we also tend to press the snooze button. Clocky prevents us from repeatedly pressing the snooze button. It is an alarm clock with wheels, which start rotating if you press the snooze button. The clock then leaps off your nightstand and rolls away. The only way to stop the beeping is to get out of bed.

Figure 1: Clocky from www.nandahome.com

Clocky is what economists call a commitment device, which helps people overcome their self-control problems. Such a device works well for people who are aware of their lack of willpower, but not for those who are not, as they would not buy the clock. For them we need other solutions to close the gap between planning and doing. Nudging is such a solution.

Nudging involves giving people a subtle push in a particular direction, while giving them the freedom to deviate from this direction. It can be used to reduce psychological biases such as the gap between planning and doing. There is currently a lot of interest in 'nudging' (Thaler and Sunstein 2008). Its importance has not only been recognized by researchers, but also by the Netherlands Scientific Council for Government Policy, Dutch Ministries, and world leaders like Barack Obama and David Cameron.

A good example of efficient nudging is the study "Save More Tomorrow" by Thaler and Benartzi (2004). In the US, there has been a move from defined benefit to defined contribution pension plans. Under defined contribution, employees must take initiative to join a pension plan, must decide how much to contribute, and choose how to invest it. There is evidence that many people do not join the plan. At the same time, many also believe that their own savings rate

is too low. Thaler and Benartzi designed the Save More Tomorrow program to increase employees' savings without forcing them to do so.

The program gives employees the option of committing themselves to invest part of their future salary increases into the retirement savings plan, while giving them the freedom to opt out of the plan whenever they want to. In its first implementation many people decided to join the plan and remained enrolled for at least four salary increases. The average savings rate went up from 3.5 percent to 13.6 percent in 40 months. One of the reasons for this success is that the program was designed in a very clever manner. It used particular psychological biases to debias another one.

Employees found the plan sufficiently appealing to actually join it. Committing to invest part of *future* salary *increases*, instead of current salary, made the program especially attractive for two reasons. The first reason is that planning to invest later (in the future) is more attractive to people than investing immediately. We tend to believe that it will be easier to start saving in the future than now (Frederick et al. 2002).

The second reason is that loss aversion makes it easier to save part of a salary *increase*, than to save part of our *current* salary. Loss aversion means that losses relative to a reference point weigh more heavily than equivalent gains. Saving part of a future salary increase involves giving up part of a gain relative to our current reference consumption. Saving part of our current salary involves a loss of current consumption. Loss aversion predicts that we prefer a reduction in a gain to an equal loss, which is why we prefer to give up consumption that we are not yet used to.

Once having subscribed to the program, the status quo bias says that people tend to stick to the status quo, in this case being committed. Even though they might plan to opt out of the program in the future, they fail to do so because of procrastination, which is part of the reason why few people opted out.

In this example, it was clear whom to nudge – employees who were not saving enough – and in which direction to nudge – towards increased savings. Yet, this is not always the case. In order to successfully implement nudging to close the gap between planning and doing, we need to know what people plan and how they deviate from their plans. We can find out what they do by observing the choices they make. However, as plans are often not carried out, it is impossible to observe the *plans* people make merely by observing their behavior.

Currently, successfully implementing nudging is impossible in most cases, because we often do not know whom to nudge, in which direction to nudge, and how to nudge. In the coming years, behavioral economists will have to try to answer these questions so that nudging can be used to create decision making environments that increase individual wellbeing.

In my research, I will analyze whom to nudge, in which direction to nudge, and how to nudge to reduce the gap between planning and doing. In order to do so, the first step is to understand how people make decisions involving the future.

4. Intertemporal choice

The field of research which analyzes how people make decisions involving the future is called intertemporal choice. Intertemporal decisions typically concern choices between sequences of outcomes or events at various points in time. Examples of such outcome sequences are income streams, activities for the next few weekends, or health profiles for the coming years. I use the term outcome to refer to anything that can be received or experienced at a particular point in time. Examples of outcomes are monetary amounts, goods, and health states.

The most elementary intertemporal decision we can encounter is whether to receive a particular amount of money now or at a later point in time. Imagine you have the choice between receiving €100 now or in one year. Most people would prefer to receive the money now. There are several reasons for this preference.

First of all, we can earn a positive real interest rate in the market, which makes €100 now worth more than €100 in one year. We could, for instance, invest the money now and earn interest, so that it is worth more than €100 in one year. However, this line of reasoning does not work for non-monetary outcomes, like goods or health states, for which we also observe a preference to receive a gain sooner rather than later. Second, we may think that we get more pleasure from €100 now than in one year. This can be the case if we believe that we need the money more now than in one year from now. Economists refer to the pleasure derived from €100 as the *utility* derived from €100. Third, we may feel uncertain that we will actually receive the €100 in one year, while this uncertainty is not present if we receive it now. Fourth, we may be uncertain about the utility we can derive from the €100 in one year.

These four reasons for preferring pleasant outcomes as soon as possible all relate to the outcomes and to the utility levels derived from the outcomes, irrespective of the timing of these utility levels. A fifth reason to prefer a pleasant outcome as soon as possible, is pure time preference. *Pure time preference* refers to the preference over timing of expected utilities irrespective of the level of these utilities. We tend to be impatient in the sense that we prefer pleasant utilities sooner rather than later. This means that we discount future utilities by valuing future utilities less than current ones.

Economists use the discounted utility model to clearly separate pure time preference from utilities. The discounted utility of receiving an outcome x at a point in time t is $\delta(t)u(x)$. The discount function $\delta(t)$ captures pure time preference, and u(x) is the (expected) utility derived from outcome x.

People are mostly impatient for pleasant outcomes, implying a declining discount function. Thus, the further in the future we derive a utility, the lower the weight given to this utility. It is often assumed that people are impatient for unpleasant outcomes as well, with a declining discount function, such that they prefer to delay unpleasant utilities as much as possible. Yet, there is also evidence that people prefer to speed up unpleasant outcomes to get them over with (Loewenstein 1987). For instance, think of a visit to the dentist. If we derive unpleasant utility even from just anticipating the visit, we might just as well get it over with quickly. Most research in intertemporal choice has focused on pleasant outcomes. Today, I will also focus on pleasant outcomes. However, it is important to assess the extent to which the results for pleasant outcomes transfer to unpleasant outcomes.

5. Whom to nudge?

Most research in intertemporal choice has focused on pure time preference by measuring properties of the discount function. One line of research analyzes the strength of discounting by investigating how much people discount future outcomes. Another line of research focuses on the change of discounting over time and its relation to time-inconsistency.

The strength of discounting is not only relevant at an individual level, but also at a societal level. At the individual level, for instance, it determines how much we save for the future, and how healthy we would like our lifestyle to be. At a societal level, it is important for policymakers to know by how much we discount future outcomes. Policies regarding climate change, for example, depend on the value we attach to the far future of new generations compared to our own present. Another example is the healthcare sector, where policymakers have to determine which treatments are reimbursed by standard health insurance packages. The value of a healthcare treatment is largely determined by the value we attach to its associated future improvements in health.

Discounting the future, in itself, does not necessarily lead to a gap between planning and doing. It may lead us to plan to postpone an unpleasant task to the future, yet if we stick to our plan, planning and doing coincide. It is the change of discounting, which may result in a gap between planning and doing.

Since Samuelson's (1937) introduction of exponential discounting, it was widely adopted by economists. Exponential discounting corresponds to constant impatience. Imagine a choice between €100 in one year and €110 in one year and a month (upper decision tree in Fig. 2a). Let us assume that you prefer to receive the larger outcome €110, even though you have to wait longer to receive it. Constant impatience predicts that you will also choose the €110 if the choice is between €100 immediately and €110 in a month (lower decision tree in Fig. 2a). Constant impatience means that a preference between two (sequences of) outcomes is unaffected if both (sequences of) outcomes are similarly shifted through time by adding an equal delay to all outcomes in both sequences. In Fig. 2a, it means that you will choose the same in both decision trees (in this case 'down'). It implies that a time duration is equally important when it starts in the near future as when it starts in the further future. Thus, constant impatience means that we are equally willing to wait in the near and in the far future.

Figure 2a: Constant impatience

Contradicting the assumption of classical economics, there is much evidence that people have decreasing impatience and find delays in the near future more unpleasant than equal delays in the far future. People with decreasing impatience may well choose €110 if the choice is between €100 in one year and €110 in one year and a month ('down' in the upper decision tree of Fig. 2a) and switch to €100 if the choice is between €100 immediately and €110 in a month ('up' in the lower decision tree of Fig. 2a). Waiting one month longer if they have to wait one year anyhow is more acceptable to people than waiting one month longer if they haven't had to wait yet. In other words, these people are less impatient for the far future than for the near future.

Decreasing impatience can result in a gap between planning and doing. Suppose you choose €110 if the choice is between €100 in one year and €110 in one year and a month ('down' in the upper decision tree of Fig. 2a), and switch to €100 if the choice is between €100 immediately and €110 in a month ('up' in the lower decision tree of Fig. 2a). Thus, you plan to wait one month longer in one year to obtain the larger outcome €110.

Let us now consider what you would choose if time passed and you were asked to reconsider your choice in one year. Thus, your choice now is summarized by the lower decision tree of Fig. 2c. From the perspective of the new point in time, this decision looks the same as the decision made previously between €100 immediately and €110 in a month. It is often assumed that people also make the same choice as before – they choose the same in the two decision trees in Fig. 2b. It follows that you would now choose the €100 immediately. Thus, while you had planned to wait for the better outcome of €110, once time passes and you get the chance to reconsider your choice, you switch to the sooner outcome €100, i.e., you choose 'down' in the upper decision tree of Fig. 2c and 'up' in the lower one.

Figure 2b: Time invariance

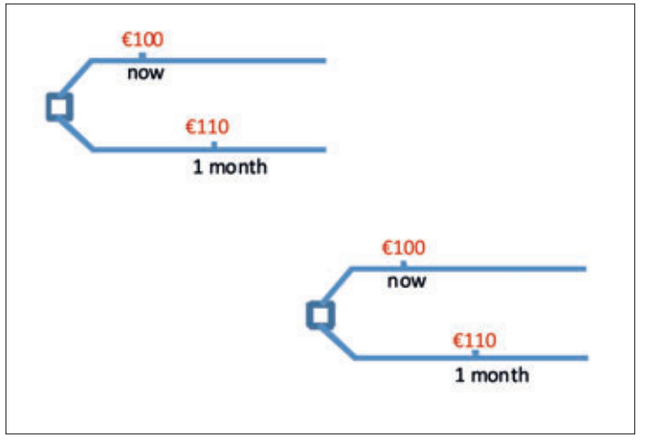
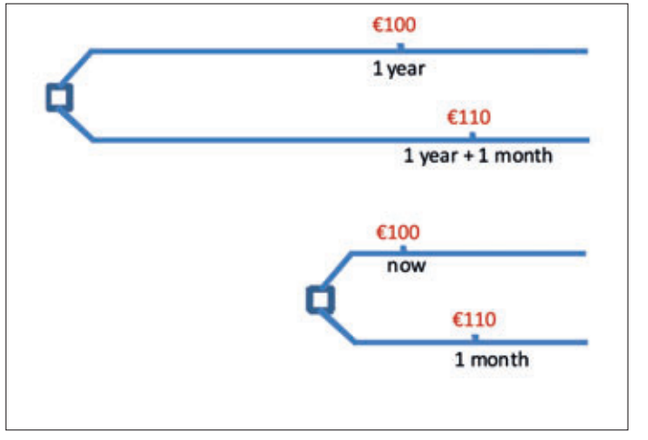


Figure 2c: Time consistency



This example shows that people who have decreasing impatience are a potentially vulnerable group, in the sense that they can develop a gap between planning and doing. This group can benefit from nudging strategies. Most of the literature has focused merely on the existence of decreasing impatience and has not analyzed the degree of decreasing impatience. Measuring this degree is important to more accurately pinpoint the groups of people who can benefit from nudging policies.

One approach to measure the degree of decreasing impatience is to estimate the corresponding parameters of discount functions. The evidence for decreasing impatience has led to the development of new discount functions that can replace the classical exponential one, which assumes constant impatience (Loewenstein and Prelec 1992; Phelps and Pollak 1968). Prelec (2004) and Rohde (2010) showed that one of the parameters of the hyperbolic discount function of Prelec and Loewenstein isolates the degree of decreasing impatience. Yet, hyperbolic discount models have a strong disadvantage when used to distinguish people. Next to the evidence for decreasing impatience, there is also evidence for increasing impatience. Hyperbolic discount functions cannot be used for increasing impatience. This has led my co-authors and I to develop new discount functions that can accommodate both decreasing and increasing impatience (Bleichrodt et al. 2009). The parameters of these discount functions can be used to estimate the degree of decreasing impatience and to categorize people accordingly. Recently, I also developed a more general measure of decreasing impatience which is independent of any discount model and can be applied even if discounted utility does not hold.

Next to decreasing impatience, other factors may also lead us to deviate from our plans. In Gerber and Rohde (2010), we show how a change in the expectations about utility levels derived from outcomes can lead to a change of plans. Such changes can, for instance, be driven by changes in anticipated resources to which the outcomes will be added. They can also be driven by changes in perceived uncertainty about these resources. In the coming years, we will be examining the extent to which changing impatience on the one hand, and changes in expected utilities on the other hand contribute to the gap between planning and doing. This will not only be important to accurately target policies to those groups that need it most, but also to design effective decision making environments to help these groups overcome their time-inconsistencies.

6. In which direction to nudge?

Understanding how people make decisions for the future enables us to target nudging strategies to those people who are most vulnerable to a gap between planning and doing and the associated loss in wellbeing. Once we have identified this group of people, we need to determine in which direction they should be nudged.

Nudging is also referred to as libertarian paternalism (Thaler and Sunstein 2003); paternalism, as its purpose is to influence people's choices, and libertarian, as people keep their freedom to deviate from the nudge. The libertarian component of nudging is a very important one. In line with this freedom to deviate from a nudge, I believe that an effective and sustainable nudge should be one which is favored not only by its designer, but also by the people who are subject to it. Thus, I believe that people should be nudged in the direction they would like to be nudged. But how can we determine this direction?

We first have to identify which decisions people would like to make, which is challenging. The very need for nudging shows that this direction cannot be determined by simply observing people's choices. Welfare is no longer equivalent to revealed preference. In the coming years, we will have to develop methods to determine the direction in which to nudge if we want to successfully implement it.

The literature on wellbeing provides a fruitful route to help us decide in which direction to nudge. Benjamin et al. (2012) asked respondents to choose between two alternatives in hypothetical scenarios. They asked not only which option respondents would choose, but also which option they believed would make them feel happier. They found a systematic difference between these two. These results underline the difference between revealed preference and wellbeing. The methodology of Benjamin et al. can be useful in determining the direction in which people would like to be nudged. Asking respondents which alternative would make them happier can give insights into the choices people would like to make, as opposed to the choices they actually make.

Through the method of Benjamin et al. (2012), the direction in which to nudge is determined by the expected wellbeing or happiness derived from alternatives. Expected wellbeing is an ex ante measure of desired behavior. Another way to measure desired behavior is to ask people ex post whether they

regret their actual behavior and what they wish they had done differently. We will develop several ex ante and ex post measures of desired behavior and will assess whether these yield consistent views on the directions in which to nudge.

7. How to nudge?

Once desired behavior has been determined, a nudge can be operationalized. But how do we operationalize it? Typically, we use particular psychological biases in an advantageous manner to bring people's actual choices closer to their desired choices. One such psychological bias is the status quo bias, which says that people have an unjustified tendency to stick to the status quo. This bias results in people sticking to the default alternative if there is such an alternative.

Thaler and Benartzi (2004) used this bias to people's advantage in their "Save More Tomorrow" program which I mentioned before. They made it relatively easy for people to join the program and to commit to invest part of their future salary increases in the retirement savings plan. Being committed would then become the new default. Once being committed, the status quo bias would induce people to stay committed.

Note that the same status quo bias prevents people from saving enough if the default is to save nothing. Thus, the same disadvantageous bias which prevented people from saving enough without the "Save More Tomorrow" program was used in an advantageous manner to induce these same people to save enough. In this sense, we can also say that the people who are most likely to deviate from the nudge and opt out of the program are the ones least in need of the program.

Some people may question the degree of libertarianism in libertarian paternalism. In theory, people are free to deviate from the nudge, but the designers of the nudge prefer that their target group sticks to the nudge, which seems to be contradictory. I believe that the status quo bias and the resulting default effect can convince even those of you most skeptical of the libertarianism of nudging that nudging is unavoidable in some cases. There is always a default. If the status quo bias prevents us from deviating from this default, then choosing this default in a desirable manner cannot be worse than choosing the default randomly.

In Thaler and Benartzi's program, the default of being committed to save part of future salary increases was not imposed on people. In fact, the default was still to save as much as before the program started. Yet, it was made very easy for people to make a decision which would change the default: loss aversion and decreasing impatience make it much easier for people to commit to saving *future* salary *increases* than to increase current savings. Thus, next to using the

status quo bias in an advantageous manner, Thaler and Benartzi also used loss aversion and decreasing impatience to people's advantage.

To design efficient nudges in other contexts, we intend to use various psychological biases depending on the context. This requires a thorough understanding of how people actually make decisions. Thus, apart from exploring strategies to alter people's behavior, we also need to continue to investigate what drives people's actual behavior. The Behavioural Economics group at the Erasmus School of Economics provides an excellent environment to do so.

8. Methodology

In our research, we use experiments to analyze which choices people make and what drives these choices. These choices are then translated into economic models. What distinguishes the behavioral economics group at the Erasmus School of Economics is the interaction between experiments and mathematical modeling. We use mathematical and theoretical skills to develop efficient and simple methods to analyze choices in experiments. We then translate the results of our experiments into improved decision making models.

With the recent opening of the ESE-econlab, we now have two labs to analyze people's choices in experiments. The Erasmus Behavioural Lab is a state of the art lab with instruments to measure individual decision making, such as eye-trackers to follow an individual's eye movements. The ESE-econlab provides facilities to analyze group decision making and interactions between decision makers. The labs complement each other and provide an excellent environment for behavioral economics research.

The Master specialization of Behavioural Economics, which started in September 2012, enables us to disseminate our research output to the next generation of economists in companies, governments, and in other organizations.

The opening of the ESE-econlab, the start of our own Master specialization, and the acquisition of several research grants have given our group a tremendous boost.

9. Conclusion

Today, I have shown how behavioral economics can contribute to understanding and reducing the gap between planning and doing. Classical economics assumes that people are perfectly rational. Research in other social sciences, however, shows that people often systematically deviate from rational behavior. Behavioral economics uses insights from these social sciences to increase the predictive power of economics.

The ageing of society and the financial crisis have put pressure on government budgets. As a result, financial responsibilities are being shifted from social security and healthcare systems to individuals. Behavioral economics shows that it is very difficult for individuals to bear such responsibilities, due to various psychological biases such as the gap between planning and doing. At the same time, it also shows how these psychological biases can be used to nudge people to help them bear these responsibilities. In order to implement nudging, we need to know whom to nudge, in which direction to nudge, and how to nudge. Behavioral economics can provide answers to these questions and design decision making environments that make it easier for people to bear the responsibility for their own future.

Words of thanks

This brings me to the end of this speech. I would like to thank everyone supporting me here at Erasmus University and would like to say a few special words of thanks to a number of people.

First of all, I very much appreciate the support of the Vereniging Trustfonds Erasmus Universiteit Rotterdam, the Board of Erasmus University, and Philip Hans Franses, the Dean of the Erasmus School of Economics. Without them we would not have been here today. I am happy I can continue to be part of the Erasmus School of Economics and I hope I can help to contribute to building a creative environment where researchers and students can develop their own ideas without relying too much on the status quo.

Special thanks go to Harry Commandeur. Some people take energy, others give energy. Harry, you belong to the latter category for me. I always enjoy our efficient discussions. It is relieving to interact with someone who is not only interested in talking and planning, but also in doing. Harry, thank you very much for your trust in me.

Jean-Jacques Herings was the first to stimulate me to pursue an academic career. Jean-Jacques, you and Peter Wakker were excellent supervisors. I still consider myself extremely lucky for having had such competent and pleasant 'promotores'.

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The ageing of society and the current economic climate induce a tendency to shift responsibilities for future income and health from social security and healthcare systems to individuals. Insights from psychology show that people find it difficult to bear these responsibilities, as we suffer from a gap between planning and doing. Behavioral economists design decision making environments which make it easier for people to carry out their plans and refrain from postponing investments for the future.

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