1. What Is Behavioural Economics?

More than 10 years ago, I was in a session of the American Economic Association Annual Meetings. The speaker made some remark to the effect that it is desirable to have a small positive rate of inflation of around 2 to 5 per cent. In a growing and changing economy, resources including labour have to be reallocated from declining to expanding industries. It is necessary to have the real wage rates in declining industries decrease by a few percentage points a year to motivate people to transfer to the expanding industries. With a positive rate of inflation, this could be achieved without having to resort to the lowering of nominal wage rates, which is more painful to and resisted more by the relevant workers. A participant commented that this is impossible as the same consumption possibility set is entailed by reducing the real wages by the same x per cent either by lowering the nominal wage rates with no inflation or by keeping the nominal wage rates but with some positive inflation.

That participant took as bible the simple economic models where the utility of an individual is a function only of the amounts of goods consumed. Anything inconsistent with this is not possible to exist. He did not seem to think of the possibility that, while the simple model may be good in demonstrating some simple principles in economics, it may be too simple for other problems. It may fail to capture some important aspects of the real economy. After his comment, I was going to say that I was also more resistant to a decrease in my nominal salary than to the same decrease in real incomes through inflation. And I did not and do not see this as irrational. Failure to have one’s incomes increased when the rate of inflation is positive is generally perceived to be less of a failure than failure to prevent one’s nominal salary being cut while inflation is zero. This perception is also quite rational. The fact that the simple economic models do not take account of such preferences only means that they are inadequate for dealing with problems where such preferences are important. On the other hand, it does not mean that all behavioural departures from the simple models are rational. As will be seen below, there are significant elements of imperfect rationality in the actual behaviour of economic actors.

The story above prompted me to define behavioural economics as the study (including observation, experimentation, modelling, and policy implications) of economic behaviour beyond the traditional simple economic models of constrained maximisation with purely economic objectives (consumption and profits). Some such ‘extra’ or complex behavioural patterns include:

- rational but ‘non-economic’ objectives, for example, fairness, altruism, relative standing, and esteem (see, for example, Brennan

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irrational or non-maximising behaviour, for example, satisficing, near rational behaviour, endowment effects, procrastination, ‘defective telescopic faculty’, hyperbolic discounting, and mob psychology (see, for example, Kahneman, Knetsch and Thaler 1991; Loewenstein and Elster 1992; O’Donoghue and Rabin 2001; Simon 1997).

Day (2004, p. 716) defines behavioural economics thus:

Behavioral economics consists in (i) identifying general characteristics, rules, or principles of economic behavior based on direct observation and inquiry; (ii) constructing models based on these characteristics; (iii) determining the extent to which behavioral models approximate observed behavior; (iv) the use of models to generate scenarios of future behavior that may be influenced by policy instruments or exogenous influences.

This definition is logical. However, it is quite possible for many economists, based on direct observation and inquiry, to identify general characteristics, rules or principles of economic behaviour and to construct models that are exactly the same as the traditional simple economic models of constrained maximisation. After all, even an economist like me, who largely embraces behavioural economics, may believe that the traditional simple models explain well perhaps no less than 80 per cent of economic behaviour. (But it remains important to explore the remaining 10 to 20 per cent and to improve the explanation of the 80 per cent as well.) But it is very unlikely that such a traditional analysis will be regarded as belonging to behavioural economics.

2. On the Policy Implications of Behavioural Economics

I view the traditional simple models of economic analysis as very useful but not completely adequate for some problems and hence the study of behavioural economics is a very important supplement. However, I also suspect that some of the findings of behavioural economics have been exaggerated.

For example, consider the well-discussed endowment effects (see Kahneman et al. 1991). For the same mug, typically an individual will not pay more than $4–$5 if it is not yet in her possession. Once possessed, she will not be willing to sell it or give it up for as much as $12 or so. Such a big difference cannot reasonably be explained by the traditional income effect. I do not regard such preferences to be necessarily irrational. A person may need more than a few dollars (in addition to the value of the mug) to be induced to engage in a transaction, especially if that could be seen as reflecting a desperation to obtain some cash. Why does she have to sell something she already possesses? Some extra compensation may be needed. This is not irrational and does not imply that the marginal utility of money curve has a kink, as some behavioural economists infer. It may simply be because the person does not want to incur the costs (inconvenience of transaction, being seen as in financial desperation, etc.) involved. On the other hand, if the same person values an investment bond as worth about $5000, an offer of $5500 will probably be sufficient to induce her to sell it, especially if she is fairly confident on the valuation. However, this does not mean that the endowment effect or loss aversion does not apply to all decisions involving large sums such as in the housing market. (For the presence of loss aversion in selling houses, see Genesove and Mayer 2001.)

On the other hand, many violations of the axioms of rational choice (the expected utility hypothesis in particular) are due to the mistakes of decision makers. (Others are due to not accounting for such relevant factors as regret, excitement or worry.) I could also be tricked to choose in a way in violation of expected utility maximisation. Once discovered, I know that I should have chosen the other way. For such divergences, non-expected utility theories may have some predictive function but do not have normative implications. When we both visited the Department of Economics at the National University of Singapore in 2002, Jack Knetsch and I discussed the issue of which types of divergence or violation should
3. Implications for the Optimal Level of Public Spending

In this section I discuss the implications of some findings of behavioural economics, as well as some wider factors not usually considered in the simple economic models, for the optimal level of public spending, especially on public goods.

First, with increasing affluence, the welfare of an individual depends increasingly less on one’s absolute consumption and more on one’s relative standing in society. The importance of relative standing, such as relative-income or relative-consumption effects, has long been recognised by economists. While most economists refer to Veblen (1899) and Duesenberry (1949), Rae (1834) discussed the problem of relative income extensively much earlier. However, recent studies reveal the magnitude, scope and relative (to absolute income) importance of relative standing that are beyond the imagination of most people, myself included. For example, one may expect that the importance of relative standing is least in the area of health care where the absolute effects may be expected to dominate. However, Wilkinson (1997) shows that even in health care, relative standing is more important than absolute standards. The relatively poor, even with higher absolute incomes and health care, ended up with much lower levels of healthiness than the absolutely poor but relatively well-off. Mortality is more a function of relative than absolute income and health care. After reviewing biological and non-biological evidence, Frank (1999, p. 145) concluded that ‘concern about relative position is a deep-rooted and ineradicable element of human nature’.

For a single person, an increase in income increases both absolute and relative incomes. It is thus perceived to be very important. If the friends of your child all receive expensive birthday and Christmas gifts, you also have to give your child expensive ones. If your friends all have luxurious cars, you may feel less satisfied with your standard one. However, since public goods are simultaneously consumed by all individuals, no such relative pressures are present. This causes a bias in favour of private
spending or against public spending. The benefits of public spending are underestimated relative to those of private consumption. In most estimates, the marginal benefit of private expenditure is likely to be taken to include the absolute-income or intrinsic consumption effects plus the internal or direct relative income effects (as these two taken together constitute the worth of private consumption as it appears to each individual), but not to include the negative external or indirect relative income effects. This creates an overemphasis in favour of private expenditure, leading to a suboptimal level of public spending (Ng 1987).

Second, behavioural economics and wider studies show that individuals are not perfectly rational and perfectly informed maximisers as in the simple economic models. Rather, their behaviour is affected by biological instincts, the influence of commercial advertising, peer pressure, imperfect information and imperfect rationality. Moreover, at least in some aspects, these influences interact to form a one-sided bias making virtually all individuals (myself included) excessively materialistically inclined (excessive in the sense of being bad for their own welfare). The (biological) fitness-maximising instinct of accumulation (food storage in animals and money or wealth accumulation in humans) also biases us towards excessive materialism. Natural selection works on the principle of survival and reproductive fitness, not on welfare maximisation. It is true that once consciousness evolved (or was created by God), evolution (or God) ensured that the choices made on the spot with conscious decisions are largely consistent with fitness by endowing the conscious species with affective feelings. Thus, activities or things that are bad for fitness (like injuries to the body, sickness, etc.) are penalised with pain and those that are good for fitness (like eating nutritious food when hungry and having sex with reproductive members of the opposite sex) are rewarded with pleasure. Thus, our conscious decisions which are largely aiming at welfare maximisation are also largely consistent with fitness maximisation. However, the correspondence is not 100 per cent. Hard-wired bias in favour of fitness may be selectable even if not consistent with welfare maximisation. For example, the excessive fear of death and the willingness to undergo enormous hardships in order to survive will increase our fitness, even at the cost of decreasing our expected net welfare. Similarly, excessive accumulation of wealth may increase fitness even if it is welfare reducing.

Happiness studies by psychologists and sociologists (and now increasingly also by economists) show that, beyond a rather low amount needed for biological survival, higher incomes contribute little to happiness even at the individual level (less so at the social level due to the need to deduct the relative competition effect). The evidence suggests that income accounts for less than 2 per cent of the overall variance in individual happiness (Diener et al. 1993). Moreover, the direction of causation need not just be from money to happiness. In fact, ‘if there is any causal relationship in rich countries, it appears to run from happiness to growth, not vice-versa’ (Kenny 1999, p. 19; see also Graham, Eggers and Sukhtankar 2004). On the other hand, studies show that there are far more important factors (including faith, family, health and employment) affecting happiness. If money is not very important for happiness but many people still sacrifice things far more important for happiness like health and leisure, jeopardise their relationships with friends and family, and even violate moral principles and the law (thus threatening their own freedom and even lives) to make more money, are they not less than perfectly rational? Such excessive accumulation decreases welfare but may increase fitness, especially in the ancient past when our accumulation instinct was shaped. This is so since an unloved and unhappy rich man with no true friends might still have many wives and rear many children to reproductive ages. The case for the existence of irrational materialistic bias influenced by both nature and nurture is overwhelming, as discussed in Ng (2003a).

Economists tend to trust actual choices backed up by spending but doubt the reliability of happiness studies, which rely heavily on self-assessments of happiness levels that are also difficult to compare interpersonally.\(^2\) Dominitz and Manski (1999) examine the
scientific basis underlying economists’ hostility towards subjective data and found it to be ‘meagre’ and ‘unfounded’. Rather, ‘survey respondents do provide coherent, useful information when queried systematically’ (see Manski 2000, p. 132). Even without the use of more reliable methods of happiness measurement, there are persuasive arguments that existing measures are rather reliable. For example, different measures of happiness correlate well with one another (Fordyce 1988), with recalls of positive versus negative life events (Seidlitz, Wyer and Diener 1997), with reports of friends and family members (Costa and McCrae 1988; Diener 1984; Sandvik, Diener and Seidlitz 1993), with physical measures like heart rate and blood pressure measures (Shedler, Mayman and Manis 1993), and with EEG measures of prefrontal brain activity (Sutton and Davidson 1997). Moreover, correlations of happiness show remarkable consistency across countries, including developing and transitional (Graham and Pettinato 2001, 2002; Namazie and Sanfey 2001). Despite some remaining problems (see, for example, Schwarz and Strack 1999; Bertrand and Mullainathan 2001), reported subjective well-being may still be used as a good approximation (Frey and Stutzer 2002).

For those economists who are still sceptical or even look down upon and deride at the happiness measures, they should look in their own backyard. Even the measurement of the most important economic variable of gross national product (GNP) is subject to all sorts of inaccuracies. We used the imperfect measure for decades. Then came the purchasing power parity adjustment which overnight increased Chinese GNP by four times and Indian GNP by six times from this single adjustment alone! Most happiness measures may not be very accurate but I doubt that a four-times adjustment will ever be necessary for the average figure of any nation. Furthermore, the picture is not much different even if we use more objective indicators of the quality of life. Analysing a panel dataset of 95 quality-of-life indicators (covering education, health, transport, inequality, pollution, democracy, and political stability) for the period 1960 to 1990, Easterly (1999) reaches some remarkable conclusions.

While virtually all of these indicators show quality of life across nations to be positively associated with per capita income, when country effects are removed using either fixed effects or an estimator in first differences, the effects of economic growth on the quality of life are uneven and often non-existent. It is found that:

… quality of life is about equally likely to improve or worsen with rising income … In the sample of 69 indicators available for the First Differences indicator, 62 percent of the indicators had time shifts improve the indicator more than growth did …

[Easterly 1999, pp. 17–18]

Even for the just 20 out of 81 indicators with a significantly positive relationship with income under fixed effects, time improved 10 out of these 20 indicators more than income did. The importance of time is explained by the advance of knowledge at the world level that contributes to the quality of life and happiness.

The above has an important implication. The growth in the government sector, the inefficiency in government spending, and the excess burden of taxation have been much emphasised by economists. However, they tend to ignore the likely much grosser inefficiencies in private spending due to the mutually offsetting effects of relative competition, the environmental disruption effects of many production and consumption activities, and the materialistic bias due to both nature and nurture discussed above. Taking account of these inefficiencies, the diversion of spending from the private to the public sectors may well be more welfare enhancing. It is true that the cost of an additional million dollars of public spending could be rather high (but see an additional point below questioning this). But this is true in dollar terms only. If additional private spending no longer really contributes significantly either to the quality of life or the happiness of people, the social welfare costs (not in the sense of efficiency costs but in the sense of the costs in terms of happiness forgone at the social level) of public spending may be rather low, or even negative. (The latter will be the case when private consumption is welfare reducing through the environmental disruption effects. In fact,
economic growth may be welfare reducing if disruption is not or could not be directly taxed or controlled at low costs, even if the government is benevolent enough in trying to tax private incomes and spend on disruption abatement optimally, as shown in Ng (2003a). Since things like money and consumption are not our ultimate objective while happiness is, the high monetary costs of public spending should not deter us from increasing public spending on areas that are welfare enhancing (such as education, health and research) if the happiness costs are low. Economists need to complement their traditional learning with this opposite and more important piece of knowledge.

In fact, even just purely within the confines of monetary costs, there is a consideration suggesting that economists overestimate the costs of spending on public goods. Kaplow argues that public goods can be financed without excess burdens or additional distortions by using an adjustment to the income tax that offsets the benefits of the public good:

… the preexisting income tax schedule is adjusted so that, at each income level, the tax change just offsets the benefits from the public good. By construction, an individual’s net reward from any level of work effort will be unaltered: any reduction in disposable income due to the tax adjustment is balanced by the benefit from the public good. Because an individual’s after-tax utility as a function of his work effort will thus be unchanged, his choice of work effort—and utility level—will also be unaffected.

[Kaplow 1996, p. 514]

Many economists may still fail to see the point, thinking that, even if a taxpayer gets to enjoy the public good, a higher tax rate will still induce higher disincetive effects as the taxpayer can free ride on the higher level of public goods. To the extent that the benefits from public spending are related to the publicly unobservable earning abilities rather than actual incomes, this is in fact true and serves as a qualification to Kaplow’s point discussed in Ng (2000b). However, Kaplow refers to the higher benefits from the public goods due to higher income or wealth levels (for example, police protection of more properties). As such benefits cannot be enjoyed if the higher incomes are not actually earned, free riding is not possible.

We may also view the point roughly as the excess burden on the taxation side being offset by the negative excess burden on the spending side. If you can keep all the additional $100 earned, the incentive will presumably be higher than the case when you can only keep $70, with $30 taxed. But this is an accurate picture only if the tax revenue is thrown/wasted away. If it is used to supply public goods such as police protection, people may actually have higher incentives to earn the protected $70 than the unprotected $100!

4. Conclusion

In conclusion, the following main points may be reiterated.

• Economic behaviour is influenced by many factors beyond those (consumption and profits) considered in simple economic models, including fairness, relative competition, and even irrational preferences.

• Economists generally emphasise the inefficiencies of public spending and the excess burden of raising public revenue, ignoring the grosser inefficiencies of private spending arising from the following sources:
  – environmental disruption in both the production and consumption processes;
  – relative competition between individuals that is mutually offsetting at the social level; and
  – excessive materialism due to our accumulation instinct and omnipresent commercial advertising.

• The above provocative claims are supported by research results of behavioural economics, happiness studies, and a broader analysis of factors affecting welfare.

Thus, a shift of resources towards public spending in the appropriate areas, especially
those areas with less environmental disruption, with significant external benefits or possessing the nature of global and long-term public goods (including environmental protection, research, education and health) may be much more welfare enhancing. This is despite the inevitable inefficiencies in some public spending and the excess burden of raising tax revenues (the latter being likely to be offset by the negative excess burden on the spending side).

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Endnotes

1. I define irrationality as preferring or choosing something against one’s own welfare neither due to ignorance nor for the welfare of others; see Ng (1999) for details.

2. For one thing, people now may require a larger amount of subjective happiness before describing themselves as ‘very happy’. Thus, despite a possibly substantial increase in happiness, the percentage of people describing themselves as ‘very happy’ may not have increased. To overcome such difficulties, I have developed a method that yields happiness measures that are comparable interpersonally, intertemporally and internationally (Ng 1996).

References


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