

ANALYSIS

Can behavioural economics make us healthier?

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Abstract

Behavioural economics is becoming increasingly popular as a way to improve public health. **George Loewenstein and colleagues** point out some of the pitfalls and warn that it cannot be used as a substitute for conventional policies to tackle fundamental problems

In less than a decade since two papers proposed a new approach to public policy based on behavioural economics,¹² the idea has taken hold, not only in academia but in government and business. In the United States, behavioural economists have taken key positions in the Obama administration,³ and in the United Kingdom the government has established the Behavioural Insights Team (or “nudge unit”) to advise cabinet ministries about how to introduce ideas from behavioural economics into their policies.⁴ Both government and businesses in the UK have embraced nudge approaches to healthcare,⁵ although concerns have been raised about the effectiveness and coherence of the approach.⁶⁷

Behavioural economics is attracting attention because of its conceptual appeal and its potential to offer low cost, unobtrusive solutions to some of the most serious problems facing our society, such as undersaving, overeating, and excessive energy consumption. Conventional economics, which is premised on the assumption of “rational individuals who engage in maximising behaviour,”⁸ typically denies the existence of these problems. Conventional economics can therefore justify regulatory interventions, such as targeted taxes and subsidies, only in situations in which an individual’s actions imposes costs on others—for example, second hand cigarette smoke. But the potential reach of behavioural economics is much greater. By recognising the prevalence of less than perfectly rational behaviour, behavioural economics points to a large category of situations in which policy intervention might be justified—those characterised by costs which people impose on themselves (internalities), such as the long term health consequences of smoking on smokers.⁹

Internalities abound because people make mistakes, and behavioural economists have catalogued many common ones. For example, decision makers tend to put too much weight on costs and benefits that are immediate and too little on those that are delayed—a phenomenon known as present bias.¹⁰ Likewise, people tend to pay little attention to the small but cumulative consequences of repeated decisions, such as the effect on weight of repeated consumption of sugared beverages or the cumulative health effect of smoking, a decision error dubbed the “peanuts effect.”¹¹

The same errors that trip people up can also be used to help them.¹² For example, present bias can be used to advantage through programmes that offer small, frequent (and hence immediate) payments for beneficial behaviours. Such programmes targeted at smoking cessation, medication adherence, and weight loss have been shown to have major effects on behaviour.¹³⁻¹⁵ One recent study, for example, tested the effectiveness of voucher based reinforcement therapy to motivate abstinence from smoking by pregnant women. The programme incorporated a number of behaviourally informed features, most notably, frequent, mounting payments for documented abstinence. The programme significantly increased smoking cessation rates at the end of pregnancy (41% v 10%) and the benefit was still evident 12 weeks postpartum (24% v 3%).¹⁶ Other recent studies have incorporated social motivators such as competition and peer support and found that these lead to greater behaviour change than programmes that implement incentives in an individualistic fashion.¹⁷

Behavioural economics can claim credit for several policy successes, most notably in the area of saving for retirement,¹⁸ but also in health. These policies are, by design, typically less coercive than traditional policies but are often as, or even more, effective. Yet, as we discuss, behavioural approaches to policy, like traditional approaches, have potential pitfalls that warrant consideration.

Policy getting ahead of science

Although policy often lags behind social science, failing to incorporate useful insights that research has to offer, in some cases policy can get ahead of science. This tends to happen when the conceptual appeal of an idea is so persuasive that it seems to require no empirical evidence in its support or can survive empirical evidence to the contrary.

An illustration of policy getting ahead of science is the posting of calorie information in restaurant chains, which is mandated nationally in the US as part of recent healthcare reform legislation. The conceptual appeal of the approach derives from the intuition that if people know the energy content of menu offerings they will be more likely to choose lower calorie options. Despite the appeal of this reasoning, most studies have not found that calorie posting changes food choices,^{19 20} and the one study that did find beneficial effects was conducted in Starbucks, which has a clientele that does not represent the type of population with high rates of obesity targeted by the legislation.²¹ Moreover, even if calorie posting was effective in reducing consumption of calories at restaurants, such benefits could easily be offset by compensating effects on snacking or home consumption of food. This is not an unlikely outcome. In one US study conducted in the Subway sandwich chain, making healthy sandwiches subtly easier to order did cause diners to order lower calorie sandwiches, but this benefit was completely undone by a tendency by those ordering lower calorie sandwiches to order drinks and side orders with more calories.²² If such effects occur within a meal, they are probably even more likely between meals or between meals and subsequent snacking.

Another example of a policy whose appeal seems to provide resistance to the force of negative evidence is the manipulation of copayments for drugs in health insurance plans. Studies have shown that increasing copayments decreases the uptake and use of drugs.^{23 24} It is seductive to infer from these results that reducing copayments should produce a symmetrical increase in use. However, there is no necessary connection between patients' responses to an increase versus a decrease in copayments. Not only does behavioural economics suggest that people respond differently to gains and losses, but the people facing gains (non-adherers) are not the same people as those who experience losses. Most of the people who benefit from lower copayments on medications tend to be people who would have taken the drug anyway (who now receive a subsidy), and those that don't take the drug are unlikely to realise that their costs of doing so have dropped. Perhaps not surprisingly, therefore, the limited research that has evaluated reducing copayments suggests that the effects are, at best, very modest and come at a high cost.^{25 26}

More generally, the large gap between the rapid and extensive uptake of health incentive plans, and the knowledge base available to inform the design of these plans, presents considerable opportunity for mis-steps. A large, and rapidly increasing, number of employers worldwide are offering rewards for participation in wellness programmes (currently 62% in the US and 16-41% elsewhere).²⁷ While there is solid evidence that some components of such plans are highly effective in changing behaviour, many such programmes are not particularly well designed and most have been implemented without testing, so their effect on health is highly uncertain. Moreover, widespread implementation of health incentive programmes could have the unintended consequence of widening social inequities because they benefit those with healthy behaviours, who tend also to be those with higher incomes.²⁸

Carrots and sticks

One of the most basic questions in designing incentives is whether it is better to use rewards or penalties. Although many programme designers and social scientists prefer rewards because they seem friendlier to employees, other considerations tend to favour penalties.

Firstly, it is generally far more efficient to penalise than to reward, because most rewards will typically be wasted on people who would have behaved in the desired fashion in the absence of rewards. Secondly, fairness can also favour sticks over carrots. For example, after a randomised trial of financial incentives to encourage smoking cessation among employees at a large US corporation showed that they worked,¹⁴ the company decided to roll out the programme to over 150 000 employees nationwide. However, because non-smoking employees resented smokers receiving special benefits, the company transformed the carrot of a financial incentive into a stick of a financial penalty.

The distinction between programmes using carrots versus sticks is, in any case, not always apparent, and in some cases is largely a matter of framing. Consider, for example, changes implemented in Alabama's health insurance coverage of state employees, beginning in January 2010. While ostensibly introducing a programme of carrots, including a \$25 (£16; €20) discount to employees who don't use tobacco and a \$25 "wellness premium discount" for employees who meet standards for blood pressure, cholesterol, glucose, and body mass index, these changes were, perhaps not coincidentally, accompanied by a premium increase of exactly \$50.²⁹ Ultimately, therefore, healthy behaving employees were left unchanged, whereas unhealthy behaving employees faced increases in premiums: a stick masquerading as a carrot.

Behavioural economics in its place

The original papers that proposed the new approach to public policy, titled "Libertarian paternalism,"² and "Regulation for conservatives,"³¹ were deliberately crafted to appeal to groups traditionally hostile toward government intervention. Both of the papers proposed "light" paternalistic policies that were intended to nudge decision makers in self beneficial directions using minimally invasive interventions. Thus, it is perhaps not surprising that conservatives—not only David Cameron, but others such as David Brooks, the conservative *New York Times* columnist—have joined the ranks of the most ardent proponents of behavioural economics.

But, though nudges certainly have their place, occasionally a good shove advances individual and social welfare considerably more. Healthcare spending has grown in all countries at a rate that nearly all economists regard as unsustainable, and dealing with this problem will inevitably require hard choices. Relative prices do matter and cannot be necessarily overcome by behavioural economic interventions—for example, corn subsidies in the US make high fructose corn syrup cheaper than it should be and thereby encourage consumption of goods that contain it rather than fruits and vegetables. Similarly, people can be discouraged from using low value medical services if prices are higher than for high value medically necessary services.

Britain has been far more successful than the US in this regard. The US has no organisation comparable to the National Institute for Health and Clinical Excellence (NICE), which makes national decisions regarding the cost effectiveness of treatments and ensuing coverage. However, critics in the UK, including a

House of Lords select committee dealing with behaviour change, have charged that civil servants have been prevented, or at least dissuaded, from considering intervention strategies stronger than nudges.^{30 31}

Behavioural economics can confer great benefits if it is used appropriately to augment or strengthen policies grounded in conventional economics. But it cannot overcome large price distortions or perverse incentives for patients or providers, and it will be unfortunate if behavioural economics is treated as a substitute for more fundamental policies that deal with these problems.

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