THE BEHAVIORAL ECONOMICS GUIDE 2014

Edited by
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With a Foreword by
George Loewenstein and Rory Sutherland

The Behavioral Economics Guide 2014

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Contents

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FOREWORD

George Loewenstein and Rory Sutherland: *An Exchange*

George Loewenstein to Rory Sutherland:

Dear Rory,

As you know, Alain Samson asked us to write a foreword for his Behavioral Economics (BE) Guide, hoping to gain the perspective of two people applying the science (if I can be so presumptuous) of BE in the academic/public and private sectors. I'm sure that Alain would appreciate some colorful fireworks to illuminate his guide, so, as the representative of academia, let me begin with a challenge:

I've researched many topics in my long academic career, and my latest research topic has been Rory Sutherland. Watching your many **TED talks** and reading your pieces in **The Spectator** has not only been incredibly stimulating but, I must say, a lot more entertaining than my usual academic research. Your TED talks should be required viewing for any graduate student in search of novel, important research topics.

In working my way through your talks I was searching, as social scientists are prone to do, for a central, unifying theme, and it turned out to be a fairly easy task. A—*the?*—central theme of much of your work, and one that you allude to in every one of your presentations, is the idea that our perception of, and reaction to, reality is subjective. How you *feel* about products, or even about your life, is at least as important, and probably much more important, than the product or your life's objective characteristics.

This is an idea I can embrace, because it's been a central theme in my own work. In research on **'coherent arbitrariness'** [see also **'anchoring'**] with Dan Ariely and Drazen Prelec we find that people often have little idea about how much they like, or how to value, goods and experiences. We even identify experiences which are sufficiently ambiguous that people can easily be persuaded that the same experience is either good (in which case subjects are willing to pay to experience them, and more so if they are longer) or bad (in which case subjects demand to be paid to put up with them, and more so if they are longer). In another line of research, on **hedonic adaptation** (much of it with Peter Ubel and reviewed in a paper with Shane Frederick), we find that people are able to adapt to a very wide range of experiences. Adaptation, again, drives a wedge between the objective characteristics of an experience and people's hedonic reactions to it. In research on **'source dependence'**, with Sam Issacharoff, and **'history of ownership effects',** with Michel Strahilevitz, we find that how you obtain an object and how long you own it are both important determinants of value, over and above the object's objective characteristics. In diverse research on the impact of relative comparisons, my colleagues and I find support for the idea, highlighted in many of your talks, that almost all judgments are relative. And, in a series of thought pieces, I have written about the importance of meaning in people's lives and the malleability of what matters—what people value.

Many of the sections of Samson's guide to behavioral economics also reflect this theme, beginning with the first, on **Prospect Theory** (which posits that judgments of value are relative) and its

extension to **framing effects.** The sections on **Availability** and **Salience** highlight the observation that how one thinks about a decision, and the judgments one makes in support of the decision (e.g. of the probabilities of different consequences), is often highly malleable. Research on the **status quo bias and inertia** also highlights the arbitrariness of many decisions by demonstrating their dependence on defaults, due to the tremendous attractiveness of doing nothing, i.e. deciding by not deciding (to paraphrase a famous word poster from the 1970s). It would be easy to extend this list with other subsections of Samson's compilation of concepts on **anchoring effects**, the **affect heuristic**, **diversification bias**, **hot-cold empathy gaps**, and **partitioning effects**.

So far so good. Where we begin to part ways, Rory, is in the implications we draw from this central insight regarding the subjectivity of valuation and experience. The conclusions you draw are far more optimistic than those that I draw, and (not surprisingly) far more positive about the role of advertising and marketing.

Is the fact that perceptions matter more than reality a good thing or a bad thing? In some situations, I believe, it is arguably a very bad thing. To make my point, let me just focus on one of the factors that drives a wedge between the objective and the subjective: *Adaptation*. Adaptation is almost certainly, in the net, a good thing. Pain, hunger, sexual deprivation, and other forms of misery are signals that evolved to motivate behaviors that promote survival and reproduction. If the signal, such as hunger, has been in force for an extended period, but we have failed to take actions to eliminate it, it almost surely indicates that we are unable to do so or have consciously decided that it's not worth it. In that case the signal serves no further function, and nature has mercifully evolved a mechanism—hedonic adaptation—to eliminate it. An organism that doesn't adapt hedonically will not survive for long; yet, adaptation has diverse downsides.

The most obvious 'cost' of hedonic adaptation is that it occurs for goods as well as bads, creating the 'hedonic treadmill' that prevents us from enjoying whatever successes we may achieve in life. Adaptation to pleasurable experiences may also be responsible for destructive addictions, which are due in part to the decreasing pleasure taken from a given level of a good or activity and in part to the displeasure (craving)—which increases in intensity the longer and more we have been indulging—experienced when consumption of the good or activity ceases.

Also, as a result of adaptation, we can become inured to, and complacent in accepting, circumstances that in the long run are not good for us. Well before we became collectively aware of the horrendous threat of climate change, Dubos (1965:278-279) wrote prophetically that "this very adaptability enables [us] to become adjusted to conditions and habits which will eventually destroy the values most characteristic of human life."

Adaptation may work against moral values as well. In his book 'Nazi Doctors', R.J. Lifton (1990) describes a process whereby German doctors (who had taken the Hippocratic Oath to do no harm) were gradually transformed into active killers, and Christopher Browning documented, in his book **'Ordinary Men'**, a similar process among German 'Police Orders' in Poland. In the famous **Milgram experiment**, subjects were not asked to instantly administer a potentially lethal shock but were given a series of requests to increase the voltage slightly. Having just administered a 100 volt shock to someone, administering a shock of 105 volts doesn't seem all that much worse.

Moreover, but without going into further detail, to the extent that we experience, but fail to predict, adaptation in ourselves and others, all sorts of other bad consequences arise—interpersonal misunderstandings and bad decisions, as highlighted in the subsections of Samson's review focusing on **projection bias** and **empathy gaps**.

Before passing the proverbial baton to you, let me turn to my second point—the role of advertising and marketing. In several of your TED talks you make the claim that advertising creates value because it highlights positive aspects of subjective experience that people might not otherwise appreciate. I find this claim difficult to accept as a general rule. It's true that advertising can elevate people's *desires* for specific products, but does this value translate into *happiness*? And, closely related, are the products that tend to get marketed the ones that bring people enduring satisfaction, or, rather, those that are profitable to sell?

I am reminded of a cute paper by Jing Xu and Norbert Schwarz titled **'How do you feel while driving your car?'** The paper focuses on people's attitudes toward driving nice cars—I believe the example they use to illustrate their point is a BMW, which in the US perhaps to a greater extent than in Britain epitomizes a 'prestige brand'. Xu and Schwarz asked people to predict and recall how driving their own car feels, and they found that answers to these questions were highly correlated with the cost of the car. Yet, when people were asked "How did it feel last time?," their self-reports were uncorrelated with the cost of the car, except in the special and unusual situation that they were driving the car for pleasure, i.e. on a 'joy ride' (contrary to the stereotype, we Americans do spend much of our time engaged in activities other than joy-riding).

Marketing in this case does not seem to create *value* but instead to create *desires* that are, if anything, antithetical to value. There is some truth to the song lyric that "the best things in life are free," but freely available pleasures rarely, if ever, benefit from the value-enhancing wonders of commercial marketing.

One day I spent a delightful day biking with a friend, which ended up at a roadside tavern where we rewarded ourselves and undid the health benefits of the ride, with burgers and fries and pints of beer, paying with a credit card. Suddenly, I experienced a déjà vu moment, but it wasn't because I had experienced something similar in the past. With an unpleasant shock of recognition, I realized that I was playing out with frightening precision a scenario I had witnessed in an advertisement for a credit card – perhaps even the same one as I had used to pay for our refreshments. Advertising has created the iconic images by which we form our conception of the good life. This is not value-enhancing. The result, most of the time, is discontentment when we recognize the paucity of our own existence when compared to the gorgeous groups of mirthful friends hanging out in exquisite places and drinking Bacardi. Moreover, even in the unlikely event that we do manage to achieve the transcendent—the advertising ideal—as I did during that bike ride, advertising has a pernicious effect; it transforms experience into cliché.

One last gripe: **Would you really enjoy that slow train ride with the supermodels?** Like the Bacardi commercials, the main emotion that a slow train ride surrounded by supermodels would engender in me would be frustration.

Rory Sutherland to George Loewenstein

Dear George,

There are some aspects of this debate which I know I shall never win. Academics will always be hostile to consumerism, and for very easily understandable reasons.

First of all, academics inhabit a peer group where overt displays of material wealth tend to reduce rather than enhance status. I may be stereotyping the faculty at Carnegie Mellon here, but I rather suspect, George, that if you were to return from Europe kitted out head-to-toe in Dolce & Gabbana and driving a Bugatti Veyron, your stock among the faculty would fall rather than rise.

There is, of course, a perfectly simple explanation for this: **countersignalling and game theory**. For any group which enjoys a peer group status currency of its own (instead of Porsches, academics have tenure, citations, parking spaces, named professorships, Nobel Prizes – and, boy, do you like dressing up in gowns) it is obviously in your interests to disparage and depreciate other status currencies, in order to increase the relative value of your own. British aristocrats have been doing this for centuries by praising the importance of breeding and ancestry – areas where they enjoy a comparative advantage – and dismissing new money (except when discreetly marrying it).

The point I make here is that we are being manipulated and nudged all the time – not only by media or businesses, but also by each other. The process is inevitable. Criticising nudging is like criticising electromagnetism or gravity – the best we can do is be aware of the forces at work, to understand them and to make people widely aware of them.

But I digress...

I began writing this reply in a café in my local town. I drove there, paid to park my car (not a BMW) in the local car park using an app on my mobile phone, posted three small packages to someone 70 miles away (at a cost of about £1.50 each), bought a coffee (a flat white, for £2.40) and then sat down to write this.

Just as with your experience of the cycle ride and the burger, these few trivial incidents can be quite illustrative of some of the wider peculiarities of human psychology and economic behaviour.

First of all, my parking experience. I parked my car using the steering wheel. Nothing remarkable in that, you may say. In fact all cars, from Formula 1 cars to your much-despised BMWs, are steered using what is essentially the same interface.

But when thought about more deeply, it is quite interesting. Why do we steer cars with our hands? After all, our hands did not evolve for this purpose at all.

What the steering wheel does is exploit an evolutionary adaptation – the opposable thumb – for a purpose entirely different from that for which it was intended.

We do quite a good job of adapting the design of *physical* objects to our physical form. Where we are still woefully poor, however, is in the field of *psychological* design: when we start designing experiences and interfaces for the evolved human brain, we often inadvertently build in painful psychological hooks that cause immense confusion, distress and annoyance.

So my first approach is always to use the insights of this science merely to eliminate such annoyances. I think – I hope – that is mostly harmless. However, I would not deny that it *is* possible to manipulate people using the techniques of behavioural science in advertising and marketing. In fact one of the most important applications of behavioural science is to spot when people are designing misleading choices, and then to call them out for doing it.

More than that, in fact. I would actively *like* a moral debate on this issue and believe it is long overdue. In truth, I think that the advertising industry ducked this debate about fifty years ago by engaging in a dubious act of denial. Unnerved by books such as *The Hidden Persuaders*, by attacks on motivational research and by an experimental study of subliminal advertising effects in cinemas (which it later transpired was bogus) they disingenuously played a get-out-of-jail-free card by pretending that advertising worked exclusively within the realm of conscious awareness.

This act of denial had some terrible side-effects. It created a strange culture within marketing where everyone pretended that all persuasion occurred through reasoned argument alone. As a result of this convenient fiction, important aspects of human behaviour were effectively off-limits for about fifty years. The denial of subliminal effects also made marketing/psychology much less influential than it deserved to be.

The truth is, of course, much more complicated – or complex, in fact. My own view is that, since human behaviour is a complex system, interventions within it can rarely be classified as always simply good or bad – there are always questions of nature and degree.

Marketing is like cholesterol. There are good kinds and bad kinds. It is essential to our existence but too much of it can be dangerous. The problems occur when we avoid the subject altogether – precisely to sidestep this ambiguity. Because of this strange moralistic aversion to using insights from psychology in the design of experiences, we have shied away from this subject instead of paying it the attention it deserves.

But, as I said, my main focus is on removing hooks and snags. In advertising we often talk about 'added value', but there is such a thing as 'subtracted value', too.

This subtracted value happens when we design for the wrong part of the brain (market research) or for an imaginary brain (that of *homo economicus*) rather than for the whole brain as it actually is. When we do this we actually make products or services which are less valuable than they should be.

We make this mistake of creating 'subtracted value', or of negating real value, for various reasons. For one thing, we do not understand the shape of our own brains as well as we do our bodies. Moreover, for some strange but perhaps adaptive reason, we are also blind to our level of ignorance about our own psychology, since we have a natural tendency to 'post-over-rationalise' the reasons for many of our feelings and behaviours.

This causes us to design for the wrong kind of brain. Because the System 2 part of the brain (to use **Kahneman's analogy**) is the noisiest and most talkative part of our mental apparatus, we tend to design things for that part of our mental make-up, and ignore those 'System 1' aspects of our evolved psychology which are sometimes both incapable of expression and/or and opaque to introspection. Those more diffident parts of the brain – which are hugely involved in decision making and behaviour and many other important things – are effectively mute.

That's the problem which happens when you ask people what to do. Market research is often at risk of only listening to part of the story.

And now I come to my coffee and my postage. And, to be frank, I am completely flummoxed. By any objective measure, the relative price of these two goods makes no sense at all. I could have saved 95% of the price of my coffee by the simple expedient of waiting until I got home and making it myself. It is easily substituted for. By contrast, had I decided to boycott the Post Office and to deliver my packages in person, it would have taken me the best part of the day and cost about £25 in travel costs.

Yet do you hear consumers wandering around praising the postal service for its spectacular network effects and economies of scale? No, you do not. (Ungrateful bastards.)

I imagine there was some period after the penny post was introduced in the 1840s when people did go, "Wow, this is really cool" – for about a month. But no-one now seems to separate the value of posting a letter from some established norm about what it costs to post a letter. I suppose in technical terms what we could say is that "The consumer surplus creates no happiness." A service for which I might willingly have paid £10, were no cheaper alternative to exist, is sold to me for £1.85 – and yet I do not walk out of the post office punching the air with the feeling that I just saved £8.15 on a £10 good. Instead I just think, "Hey, £1.85 – that's what a package costs to send, so I guess that's what it's worth, meh."

I don't know what the answer is to this question of adaptation. All I would argue is that the possibility exists to make people a little more appreciative of experiences such as posting a letter. In such a case I would argue that what advertising creates here is not 'added value' but 'revealed value'.

Certainly I might contend that people might be better off if 1p were added to the price of every letter and the revenue then spent on telling people how good the postal service is (our postal service is certainly better than people think). Yet, if you were to announce this plan, people would be scandalised.

A few years ago, when £16bn had been spent upgrading the west-coast rail line in the UK, the national auditor criticised the rail authority for spending about £3m (i.e. c. 0.02% of the overall cost) advertising the improvements. The logic behind this, presumably, is that it's perfectly acceptable to spend £16bn improving something so long as those improvements are kept secret. This is clearly insane.

All this reveals is that there is no really objective view of value in the human mind. And therefore, as Ludwig von Mises believed, there is no sensible distinction to be made between value created in a factory and value created in an advertising agency.

Interestingly the late, mostly great, Gary Becker (in a paper with Kevin Murphy) seems to agree with me on this. Their model of advertising seems to suggest that advertising should be viewed not as persuasion (something which distorts preferences, as you suggest) but as a complementary good, the consumption of which, alongside the main product, increases the value of that main advertised product and which therefore allows sellers to capture more of the consumer surplus. He sees advertising as potentially a value-add, not as manipulation.

Nonetheless, I agree that we are right to be suspicious of manipulation. After all, the most successful advertisers over the past 150 years have been totalitarian regimes.

North Koreans seem genuinely happy with the rule of Kim Jong Un, for instance. Perhaps they are also wildly happy with their postal service, having all been shown a film at school entitled 'Brave postman battles elements in 27th Prefecture to deliver post in an efficient Juche manner in accordance with the teachings of the Dear Leader Kim Jong Un in defiance of Yankee imperialism', or something.

But what is strange is that we are already affected by frames, without being remotely aware of them. When you described your cycling experience, it was clear that you saw the cycle ride as virtuous and the food and beer as sinful. Yet people have been enjoying the consumption of beef products and fermented beverages since the time of the pharaohs.

Indeed, perhaps 900m people in China would have read your story and said, "The beer and the burger I understand. What I don't understand at all is why a presumably wealthy Yankee professor would get to the restaurant by bicycle, when I have been dreaming of owning a car for the last ten years. Travelling by bicycle is the lowest form of drudgery."

You have clearly been manipulated here. But it's not the credit card company I blame, it's Nike.

George Loewenstein to Rory Sutherland

Dear Rory,

I admit that I had it coming, and I can deal with being shot down from the ivory tower, though there is some irony to the sniper being a graduate of Cambridge—a student of classics, no less. I refuse, however, to take the rap on my fellow citizens' choice of cars (or trucks, or trucks masquerading as cars). Nor am I willing to accede to the claim that my love of bicycling is an academic pretension, or a response to effective advertising from companies like Nike (bad choice of company in any case; I don't think they make any products for bikers). In any case, I shouldn't need to be arguing for the inherent value of bicycles to a true believer in the inherent value of… **mattress-toppers**! As the popular adage goes, one man's mattress-topper is another man's mountain bike.

I have never been in a debating club (unlike Cambridge, my university didn't have a famous debating club), but my understanding is that a common strategy of debating is to disarm your opponent by pre-emptively acknowledging the weaknesses in your own argument. Is it possible, however, that you take this strategy too far? How can I outdo a statement that "the most successful advertisers over the past 150 years have been totalitarian regimes," or your citing of Joseph Goebbels and Kim Jong Un as the most successful practitioners of your craft? You have put me in the unexpected position of feeling the need to defend your profession!

"Marketing," as you write, using a metaphor that doesn't seem destined to win favor from your colleagues, "is like cholesterol. There are good kinds and bad kinds." This raises the question of when marketing is beneficial and when it is socially wasteful or even harmful. Let me propose a series of questions one could ask for any marketed product to help to identify whether its marketing is of the artery-clogging or plaque-busting kind:

Does marketing provide in-kind benefits?

Certainly some advertising is entertaining; indeed, some people I know watch the Super Bowl for the ads, in extreme cases recording the whole event then skipping over the scant moments of actual sports squeezed in between the ads. Advertising also supports media, Google searches, Facebook and all sorts of other services, and provides employment to countless individuals. Of course, if they weren't employed in marketing they would probably be engaged in other forms of gainful employment, but it is difficult to imagine exactly where a lot of the smart, creative, artistic, intuitive people who populate the marketing profession would find an alternative demand for their talents. Teaching (classics)?

How inherently good is the product?

To the extent that there are real differences in quality between products, marketing is beneficial if it disproportionately drives consumers to high-quality products. There is an old **'signaling' theory of marketing from the economist Philip Nelson** which proposes that marketing provides valuable information—that marketed products are disproportionately good ones, because it wouldn't make economic sense for a seller to propel buyers to an inferior product that shoppers would only buy once. On the other hand, many products, like bottled water, fancy liquors, perfumes, and BMWs, are highly valued only because, and to the extent that, they are successfully marketed.

Is pleasure from the product enhanced by advertising?

Even if Evian tastes, in actuality, no better than London or New York tap water, it could be argued that marketing is beneficial to the degree that it makes people feel that it does taste better, at least if doing so enhances pleasure from consumption.

Is the product good or bad for the consumer's welfare?

Some products, such as exercise clubs and highbrow cultural items such as books, movies, and plays, are arguably good for people in the sense of developing their minds or bodies. Others, such as alcohol, cigarettes, and highly processed foods, impose 'internalities'—health or other costs that consumers fail to internalize. Advertising could be argued to be beneficial, to the extent that it promotes products with positive internalities, and detrimental, to the extent that it promotes those with negative internalities. Rory, no need to tell me that I come off in this paragraph as a hopelessly elitist ivory tower snob.

Is the product good for society?

Analogous to—and much better known than—the concept of internalities are externalities, costs that people impose on others but fail to internalize. Most products, like big cars, airplane travel, and heavily packaged take-away lunches (which in this country, bizarrely, are exempt from the taxes applied to food eaten in), produce externalities, if only in the form of carbon gas emissions.

In addition, as **Robert Frank** has written about so eloquently, products that are consumed conspicuously produce a kind of consumption 'arms race' between consumers, with not much greater benefits than the more familiar type of arms race from which the metaphor derives. One person's fancy car, large house, or incredible vacation is, for observers, a source of envy, very likely

driving them to competing conspicuous purchases in a never-ending cycle that promotes waste, encourages debt, and discourages saving (neither of which is typically observable by others).

What are the market forces?

Another form of arms race occurs in the commercial sphere. An increase in one company's marketing forces other companies to also increase their own marketing, or risk losing business. The end result may be a huge boon to marketers, but it is of questionable value to consumers or society as a whole.

Rory, to quote an esteemed ad-man, "I digress." Whatever our differences over the merits of our respective professions, we clearly agree on one point, the value of behavioral economics, and on a second point, the value of the online resource that Alain Samson has created to provide academics, practitioners, and anyone else with an interest in expanding their intellectual horizons with an entrée to the topic. After you respond, if you choose, to these comments, and hopefully answer my question about whether you would really like to take a long, slow train to Paris surrounded by supermodels, I propose that we *channel* any reader we haven't lost long ago to what they presumably came to this guide in search of.

Rory Sutherland to George Loewenstein

Dear George,

I entirely agree. And you're making me feel guilty now.

And thank you for pointing me in the direction of Phillip Nelson. I did not realise that Nelson was the original coiner of the phrases "search good" and "experience good." (A mattress-topper, by the way, is very much an experience good. Until you own one, you cannot conceive of any reason for buying one at all).

He was also the source of this quotation: "What makes the advertising issue fascinating... is that it is fundamentally an issue in how to establish truth in economics."

And it has to be said that economics has always found it difficult to understand marketing at all.

This was written in 1924 by Pigou: "Under simple competition there is no purpose in [....] advertisement since, *ex hypothesi*, the market will take, at the market price, as much as any small seller wishes to sell." Once you assume that consumers have fixed preferences and perfect information, and you really have created an imaginary economic model where there is no role for any marketing activity at all.

But the real problem is not really so much that modern economists don't realise that economics is a much more complex enterprise than the simple 100-year-old neo-classical model suggests. The larger problem may be the model of economics which persists in government, in business schools and in business itself.

The real problem with this model is the other things it leaves out: it is, essentially, a model which is trust-free, psychology-free, context-free, relationship-free and ethics-free.

In particular, by assuming trust, you effectively create a model which does not seek to understand trust or the importance it (and its absence) may play in economic activity.

As Joseph Stiglitz writes, "Even in a market economy, trust is the grease that makes society function. Society can sometimes get by without trust – through resort to legal enforcement, say, of contracts – but it is a very second-best alternative."

As a simple thought experiment, the London taxi service may be expensive, but it works because you can comfortably climb into a random black taxi at 3am and be confident that the driver will take you home. I would, at a pinch, trust any London taxi driver to drive my two young children unaccompanied. The reason this works is because of The Knowledge – a three-year commitment which you have to go through before you earn your badge. Once you have sunk that up-front investment into becoming a taxi-driver, you are disproportionately unwilling to sacrifice that investment by risking your badge by ripping off tourists, visiting professors or so forth.

Yet, if only 1% of London taxi drivers were muggers, the people who would suffer would not only be the small percentage of people who were robbed. The fact is that the whole taxi system would collapse, and everybody who ever wanted to take a taxi would suffer, as would the 99% of honest taxi drivers who would lose most of their custom.

Now in this case The Knowledge serves as a commitment device. In many other situations, your brand reputation serves the same role. A brand reputation, like the knowledge, is a double-edged sword. Like a taxi-driver's badge it is costly to acquire and hence extremely costly to lose. The compensation for this is that the trust it engenders allows you to command a price premium for as long as the products and services you sell under that brand name live up to their promises.

Or, when expressed in economic language, "The branded rent stream is capitalized into brand equity, creating a large bond held by the brand owner as a commitment device. It makes sense for consumers to deviate from trustworthy brands only when they have enough industry-specific information to do so."

Now the mechanisms consumers use to identify trustworthy participants in the marketplace vary. On eBay it is ratings. On TripAdvisor it is the customer review. In many cases it is the advice of their friends. Sometimes it is simply social-copying or habit. And sometimes it is advertising.

In fact, the idea that advertising is always persuasive is disproved by the fact that in many categories, it acts as a discouragement. No London club (or Ivy League University) can advertise successfully, as prospective buyers would take that as a sign that the club or university has more vacancies than applicants – and it is assumed that any club worth joining is oversubscribed already.

In the Soviet Bloc in the 1970s, government advertising reportedly depressed sales. In an environment of scarcity, where people expected to queue for the most banal necessities, advertising campaigns along the lines of "discover the joys of anthracite" or "things go better with gherkins" were taken as evidence that these products were of such irremediable crappiness that even desperate people weren't willing to buy them.

The understanding that a lot of life depends on signalling has come remarkably late to economics, and I suspect is not taught in all but the more advanced classes. And yet evolutionary biologists

(including Charles Darwin) had noticed the same phenomenon in nature long before. Amotz Zahavi's costly signalling theory is, I would argue, one of the most useful tools economists have for understanding human behaviour.

Which brings me to Robert H Frank. I am so pleased that you quoted him – especially his book ***The Darwin Economy*** – as I think it is one of the best books written in recent years which most people in behavioural economics have never read (George Akerlof and Rachel Kranton's ***Identity Economics*** is another). I also agree with Frank that economics – and business in general – may have more to learn from Darwin than from even Adam Smith.

The only problem I have is that evolutionary theory has much greater explanatory power than predictive power. And it is fiendishly difficult to make judgments – in evolution, in business – on what behaviours or adaptations will ultimately prove useful or not. I agree with Frank's suggestion that we should be cautious about runaway signalling effects – since they can often be inefficient. But the only problem is that quite a lot of progress probably has its origins in status seeking long before it becomes actually useful.

Cars were probably status goods for quite a few years before they were actually superior to horses as a form of transportation. Washing machines and dishwashers were once seen as luxuries. Your bicycle probably incorporates a host of improvements which were the product of rivalry and competition rather than straightforward utility. The development of computers was, for the first few decades, driven by competition among geeks long before people actually found a practical use for them.

I must admit female fashion seems to be an exception here – it was once described as "innovation without improvement" – but I'm simply not brave enough to propose imposing a pigovian tax on women's shoes.

I am also sympathetic to your list, which seeks to ask what forms of consumption have positive or negative externalities. The problem here is that many demonised products – fast food, pizza, sodas, wine, beer, bottled water – are in fact complementary goods. Their value lies not so much in themselves (Coke is no better than water as a source of hydration) but in the fact that they are accompaniments to the things in life which hedonic experts widely agree are critical to happiness: spending time with friends, providing hospitality, acts of micro-generosity and so forth. It won't win me many friends, but I would argue that there was even a positive value to cigarette smoking in this respect: certainly the quality of conversation and time spent hanging out together have both declined since most people gave up.

A perfectly serious suggestion recently advanced by an epidemiologist, to explain why moderate drinkers seem to enjoy better health than non-drinkers, is simply that light-to-medium drinkers have better social lives, which in turn prolongs their actual lives. That beer perhaps did you more good than the cycle ride.

Nonetheless, I do believe there are some forms of consumption which are more pro-social than others. I also think there are forms of consumption which deliver more happiness per pound than others – and I think this should be widely debated at the very least. Michael Norton and Elizabeth Dunn have written a book, ***Happy Money***, based on this premise.

I'll end with two more things. I admit I have been wary about marketing's power to mislead when deployed by totalitarian regimes. But there is an interesting question here: totalitarian regimes do a terrible job of marketing products but a very good job of marketing themselves – something that's easy, I suppose, when you have a 100% share of voice. But free market capitalism seems to do the opposite: it is very good at marketing products and services, but very bad at getting people to see the value in the system itself.

Finally, I think that the adoption of just a few principles from behavioural economics into business and government thinking can have a significant effect on human wellbeing and economic progress over the next ten years. The vital thing is that this happens fast. In general the speed of adoption of ideas from the social sciences seems to be measured in decades at best, centuries at worst.

At the very simplest these are:

1) Small changes can have large effects
2) Psychology is really important.
3) People can't always explain why they do what they do, or what they want.
4) Preference is relative and social and contextual, not absolute
5) Trust is never a given; commitment really matters
6) People satisfice

I am sure you can add to this with some much more valuable principles – it isn't intended to be exhaustive. But the important fact is that these are six things which are not widely assumed in decision making.

When I say that the next revolution is psychological not technological, I fervently believe it. And I know you do, too. Once that's accepted, I think all the other minor disagreements become quite unimportant.

I'll end with one last observation. **Paul Krugman once wrote a piece** asking why, long after the upheavals of urbanisation, food in England remained so bad for so long. One of his suggestions was that, by 1950 or so, Brits had simply no conception of what better food might be like…:

> *And so ordinary people, and even the middle classes, were forced into a cuisine based on canned goods (mushy peas!), preserved meats (hence those pies), and root vegetables that didn't need refrigeration (e.g. potatoes, which explain the chips). But why did the food stay so bad after refrigerated railroad cars and ships, frozen foods (better than canned, anyway), and eventually air-freight deliveries of fresh fish and vegetables had become available? Now we're talking about economics—and about the limits of conventional economic theory. For the answer is surely that by the time it became possible for urban Britons to eat decently, they no longer knew the difference. The appreciation of good food is, quite literally, an acquired taste—but because your typical Englishman, circa, say, 1975, had never had a really good meal, he didn't demand one [my italics]. And because consumers didn't demand good food, they didn't get it. Even then there were surely some people who would have liked better, just not enough to provide a critical mass.*

People are creatures of habit with narrow frames of reference. Sometimes, too, I think people are too thrifty (a lot of behavioural economics focuses on reducing the savings gap – but China arguably

has the opposite problem). Widening the scope of people's aspirations isn't always a bad thing, as I hope you have found from your culinary experience here in London in 2014.

Or, as FDR (yes, truly) remarked, late in life: "If I were starting life over again, I am inclined to think that I would go into the advertising business in preference to almost any other. The general raising of standards of modern civilization among all groups of people during the past half-century would have been impossible without that spreading of the knowledge of higher standards by means of advertising."

PART I – THE BASICS

An Introduction to Behavioral Economics

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Think about the last time you purchased a customizable product. Perhaps it was a laptop computer. You may have decided to simplify your decision making by opting for a popular brand or the one you already owned in the past. You may then have visited the manufacturer's website to place your order. But the decision making process did not stop there, as you now had to customize your model by choosing from different product attributes (processing speed, hard drive capacity, screen size, etc.) and you were still uncertain which features you really needed. At this stage, most technology manufacturers will show a base model with options that can be changed according to the buyer's preferences. The way in which these product choices are presented to buyers will influence the final purchases made and illustrates a number of concepts from behavioral economic (BE) theories.

First, the base model shown in the customization engine represents a default choice. The more uncertain customers are about their decision, the more likely it is that they will go with the default, especially if it is explicitly presented as a recommended configuration. Second, the manufacturer can frame options differently by employing either an 'add' or 'delete' customization mode (or something in between). In an add mode, customers start with a base model and then add more or better options. In a delete frame, the opposite process occurs, whereby customers have to deselect options or downgrade from a fully-loaded model. Past research suggests that consumers end up choosing a greater number of features when they are in a delete rather than an add frame (Biswas, 2009). Finally, the option framing strategy will be associated with different price anchors prior to customization, which may influence the perceived value of the product. If the final configured product ends up with a £1500 price tag, its cost is likely to be perceived as more attractive if the initial default configuration was £2000 (fully loaded) rather than £1000 (base). Sellers will engage in a process of careful experimentation to find a sweet spot—an option framing strategy that maximizes sales, but set at a default price that deters a minimum of potential buyers from considering a purchase in the first place.

Rational Choice

In an ideal world, defaults, frames, and price anchors would not have any bearing on consumer choices. Our decisions would be the result of a careful weighing of costs and benefits and informed by existing preferences. We would always make optimal decisions. In the 1976 book *The Economic Approach to Human Behavior*, the economist Gary S. Becker famously outlined a number of ideas known as the pillars of so-called 'rational choice' theory. The theory assumes that human actors have stable preferences and engage in maximizing behavior. Becker, who applied rational choice theory to domains ranging

from crime to marriage, believed that academic disciplines such as sociology could learn from the 'rational man' assumption advocated by neoclassical economists since the late 19th century. The decade of the 1970s, however, also witnessed the beginnings of the opposite flow of thinking, as discussed in the next section.

Prospect Theory

While economic rationality influenced other fields in the social sciences from the inside out, through Becker and the Chicago School, psychologists offered an outside-in reality check to prevailing economic thinking. Most notably, Amos Tversky and Daniel Kahneman published a number of papers that appeared to undermine ideas about human nature held by mainstream economics. They are perhaps best known for the development of prospect theory (Kahneman & Tversky, 1979), which shows that decisions are not always optimal. Our willingness to take risks is influenced by the way in which choices are framed, i.e. it is context-dependent. Have a look at the following classic decision problem:

1. Which of the following would you prefer:

A) A certain win of $250, versus
B) A 25% chance to win $1000 and a 75% chance to win nothing?

2. How about:
C) A certain loss of $750, versus
D) A 75% chance to lose $1000 and a 25% chance to lose nothing?

Tversky and Kahneman's work shows that responses are different if choices are framed as a gain (1) or a loss (2). When faced with the first type of decision, a greater proportion of people will opt for the riskless alternative A), while for the second problem people are more likely to choose the riskier D). This happens because we dislike losses more than we like an equivalent gain: Giving something up is more painful than the pleasure we derive from receiving it.

Bounded Rationality

Long before Tversky and Kahneman's work, 18th- and 19th-century thinkers were already interested in the psychological underpinnings of economic life. Scholars during the neoclassical revolution at the turn of the 20th century, however, increasingly tried to emulate the natural sciences, as they wanted to differentiate themselves from the then "unscientific" field of psychology (see summary in Camerer, Loewenstein and Rabin, 2011). The importance of psychologically informed economics was later reflected in the concept of 'bounded rationality', a term associated with Herbert Simon's work of the 1950s. According to this view, our minds must be understood relative to the environment in which they evolved. Decisions are not always optimal. There are restrictions to human information processing, due to limits in knowledge (or information) and computational capacities (Simon, 1982; Kahneman, 2003).

Gerd Gigerenzer's work on "fast and frugal" heuristics later built on Simon's ideas and proposed that the rationality of a decision depends on structures found in the

environment. People are "ecologically rational" when they make the best possible use of limited information-processing abilities, by applying simple and intelligent algorithms that can lead to near-optimal inferences (Gigerenzer & Goldstein, 1996).

While the idea of human limits to rationality was not a radically new thought in economics, Tversky and Kahneman's 'heuristics and biases' research program made important methodological contributions, in that they advocated a rigorous experimental approach to understanding economic decisions based on measuring actual choices made under different conditions. About 30 years later, their thinking entered the mainstream, resulting in a growing appreciation in scholarly, public, and commercial spheres.

Limited Information: The Importance of Feedback

Bounded rationality's principle of limited knowledge or information is one of the topics discussed in the 2008 book *Nudge.* In the book, Thaler and Sunstein point to experience, good information, and prompt feedback as key factors that enable people to make good decisions. Consider climate change, for example, which has been cited as a particularly challenging problem in relation to experience and feedback. Climate change is invisible, diffuse, and a long-term process. Pro-environmental behavior by an individual, such as reducing carbon emissions, does not lead to a noticeable change. The same is true in the domain of health. Feedback in this area is often poor, and we are more likely to get feedback on previously chosen options than rejected ones.

The impact of smoking, for example, is at best noticeable over the course of years, while its effect on cells and internal organs is usually not evident to the individual. Traditionally, generic feedback aimed at inducing behavioral change has been limited to information ranging from the economic costs of the unhealthy behavior to its potential health consequences (Diclemente et al., 2001). More recent behavior change programs, such as those employing smartphone apps to stop smoking, now usually provide positive and personalized behavioral feedback, which may include the number of cigarettes not smoked and money saved, along with information about health improvement and disease avoidance.

"Irrational" Decision Making: The Example of the Psychology of Price

Boundedly rational choices, made due to limits in our thinking processes, especially those we make as consumers, are illustrated well in Dan Ariely's popular science book *Predictably Irrational*. A good portion of the research he discusses involves prices and value perception. One study asked participants whether they would buy a product (e.g. a cordless keyboard) for a dollar amount that was equal to the last two digits of their US social security number. They were then asked about the maximum they would be willing to pay. In the case of cordless keyboards, people in the top 20% of social security numbers were willing to pay three times as much compared to those in the bottom 20%. The experiment demonstrates anchoring, a process whereby a numeric value provides a non-conscious reference point that influences subsequent value perceptions (Ariely, Loewenstein, & Prelec, 2003).

Ariely also introduces the concept of the zero price effect, namely when a product is advertised as 'Free', consumers perceive it as intrinsically more valuable. A free chocolate is disproportionately more attractive relative to a $0.14 chocolate than a $0.01 chocolate is compared to one priced at $0.15. To a 'rational' economic decision maker, a price difference of 14 cents should always provide the same magnitude of change in incentive to choose the product (Shampanier, Mazar, & Ariely, 2007). Finally, price is often taken as an indicator of quality, and it can even serve as a cue with physical consequences, just like a placebo in medical studies. One experiment, for instance, gave participants a drink that purportedly helped mental acuity. When people received a discounted drink their performance in solving puzzles was significantly lower compared to regular-priced and control conditions (Shiv, Carmon, & Ariely, 2005).

Predictably Irrational and *Nudge* alerted the public to a new breed of economists influenced by the study of behavioral decision making that was pioneered by Kahneman and Tversky's work (sometimes referred to as 'choice under uncertainty'). The psychology of *homo economicus*—a rational and selfish individual with relatively stable preferences—has been challenged, and the traditional view that behavior change should be achieved by informing, convincing, incentivizing or penalizing people has been questioned (Thaler & Sunstein, 2008). The field associated with this stream of research and theory is behavioral economics (BE), which suggests that human decisions are strongly influenced by context, including the way in which choices are presented to us. Behavior varies across time and space, and it is subject to cognitive biases, emotions, and social influences. Decisions are the result of less deliberative, linear, and controlled processes than we would like to believe.

Dual-System Theory

Daniel Kahneman uses a dual-system theoretical framework (which established a foothold in cognitive and social psychology of the 1990s) to explain why our judgments and decisions often do not conform to formal notions of rationality. System 1 consists of thinking processes that are intuitive, automatic, experience-based, and relatively unconscious. System 2 is more reflective, controlled, deliberative, and analytical. Judgments influenced by System 1 are rooted in impressions arising from mental content that is easily accessible. System 2, on the other hand, monitors or provides a check on mental operations and overt behavior—often unsuccessfully.

Availability and Affect

System 1 is 'home' of the heuristics (cognitive shortcuts) we apply and responsible for the biases (systematic errors) we may be left with when we make decisions (Kahneman, 2011). System 1 processes influence us when prior exposure to a number affects subsequent judgments, as evident in the anchoring effects discussed previously (Tversky & Kahneman, 1974). One of the most universal heuristics is the availability heuristic. Availability serves as a mental shortcut if the possibility of an event occurring is perceived as higher simply because an example comes to mind easily (Tversky & Kahneman, 1974); for instance, a person may deem pension investments too risky as a result of remembering a family

member who lost most of her retirement savings in the recent recession. Readily available information in memory is also used when we make similarity-based judgments, as evident in the representativeness heuristic.

Finally, another 'general purpose' heuristic is that of affect, namely good or bad feelings that surface automatically when we think about an object. Applying the affect heuristic can lead to black-and-white thinking, which is particularly evident when people think about an object under conditions that hamper System 2 reflection, such as time pressure. For example, consumers may consider food preservatives' benefits as low and costs as high, thus leading to a significant negative risk-benefit correlation (Finucane, Alhakami, Slovic, & Johnson, 2000).

The role of affect in risky or uncertain situations is also evident in the risk-as-feelings model (Loewenstein, Weber, Hsee, & Welch, 2001). 'Consequentialist' accounts of decision making tend to focus on expectations along with the likelihood and desirability of possible outcomes. The risk-as-feelings perspective explains behavior in situations where emotional reactions to risk differ from cognitive evaluations. In these situations, behavior tends to be influenced by anticipatory feelings, emotions experienced in the moment of decision making.

Salience

Availability and affect are processes internal to the individual that may lead to bias. The external equivalent of these processes is salience, whereby information that stands out, is novel, or seems relevant is more likely to affect our thinking and actions (Dolan et al., 2010). For example, a technological device can be framed as being 99% reliable or having only a 1% failure rate, thereby emphasizing either positive or negative information. Salience also underlies heuristic judgments that rely on external cues. Some psychologists have derived effort-reducing heuristics that simplify consumer decision making. The brand name heuristic, for example, suggests that salient cues in the form of brand names can be used to infer quality (Maheswaran, Mackie, & Chaiken, 1992). In terms of degrees of visual salience, one study found a congruence effect between price and font size, where showing a lower sale price in a small print size relative to the regular price resulted in greater purchase likelihood than presenting the sale price in a relatively large font (Coulter & Coulter, 2005). Finally, the salience of options can also be manipulated by rearranging the physical environment; for instance, a change as simple as moving water bottles closer to the cashier in a cafeteria has been shown to increase the salience and convenience of this healthier drink choice and thereby significantly boost water sales (Thorndike, Sonnenberg, Riis, Barraclough, & Levy, 2012).

Status Quo Bias and Inertia

While many heuristics and biases are the result of quick impressions, the automatic character of System 1 is also reflected in a human aversion to change. One aspect in this respect is evident in the formation of habits, automatic behavioral patterns that are the result of repetition and associative learning (Duhigg, 2012). The preference for things to remain the same, such as a tendency not to change behavior unless the incentive to do so

is strong, has been termed the "status quo bias" (Samuelson & Zeckhauser, 1988). Inertia is one form of people's propensity to remain at the status quo (Madrian & Shea 2001), a well-known manifestation of which includes low rates of pension plan enrolment when people have to make the effort to sign up ('opt-in'). In this case, an effective way to increase enrolment rates is to change the *default*—what happens when people do not make an active choice. Inertia, procrastination, and a lack of self-control are problems that make changes in default options from opt-in to opt-out an effective strategy, so, instead of having to take action to enroll (opt-in), people now have to make an effort to dis-enroll (opt-out) (Thaler & Sunstein, 2008). Nudging with defaults is one of the primary tools of the 'choice architect' (Goldstein, Johnson, Herrman, & Heitmann, 2008).

Temporal Dimensions

Another important domain of BE introduces a time dimension to human evaluations and preferences. This area acknowledges that people are biased towards the present and poor predictors of future experiences, value perceptions, and behavior.

Time Discounting and Present Bias

According to time-discounting theories, present events are weighted more heavily than future ones (Frederick, Loewenstein & O'Donoghue, 2002); for example, many people prefer to receive £100 now over £110 in a month's time. Discounting is non-linear, and its rate is not constant over time. People's preference for receiving £100 a week from now versus £110 a month and one week from now will not be the same as their preference for receiving £100 a year from now versus £110 a year and one month from now. Although the gap is one month in both cases, the value of events that are farther in the future falls more slowly than those closer to the present (Laibson, 1997).

In addition to inertia, future discounting is another key problem that explains low retirement savings rates. One piece of research suggests that behavioral change could be achieved by helping people connect with their future selves. In the study, people who saw an age-progressed avatar of themselves were more likely to accept future financial rewards over immediate ones (Hershfield et al., 2011).

Diversification Bias and the Empathy Gap

Time inconsistency also occurs when our present self fails to predict accurately the preferences of our future self, a point illustrated well by diversification bias (Read, & Loewenstein, 1995). When shopping for multiple future consumption episodes, I may choose the variety pack of cereal, only to realize two weeks later that I would have enjoyed my breakfasts more if I had just stuck to my favorite kind. In the case of food, diversification bias should be particularly strong if you make your purchasing decision when you're satiated (e.g. right after a meal). This inability to appreciate fully the effect of emotional and physiological states on decision making is known as the (hot-cold) empathy gap, a term coined by George Loewenstein, one of the founders of the field of behavioral economics. Hot states include a number of visceral factors, ranging from negative emotions associated with high levels of arousal (e.g. anger or fear) to feeling states (e.g.

pain) and drive states (e.g. thirst, cravings related to addiction, or sexual arousal) (Loewenstein, 2000). The best known illustration occurs in sexual decision making, whereby men in a 'cold', unaroused state often predict that they will use a condom during their next sexual encounter, but when they are in an aroused 'hot state' they may fail to do so (Ariely & Loewenstein, 2006).

Forecasting and Memory

When we make plans for the future, we are often too optimistic. For example, we are subject to committing the planning fallacy by underestimating how long it will take us to complete a task and ignoring past experience (Kahneman, 2011). Similarly, when we try to predict how we will feel in the future, we may overestimate the intensity of our emotions (Wilson & Gilbert, 2003). The level of happiness that I expect to feel during my next vacation, for example, is likely to be higher than how I will rate it during the actual experience. There are different explanations for this error, including how we remember past events. My memory of a past holiday is likely to be non-representative of the holiday overall (Morewedge, Gilbert, & Wilson, 2005), and I may evaluate my last vacation based on the most pleasurable points and its end, for example, rather than the average of every moment of the experience (the peak-end-rule; Kahneman & Tversky, 1999). Finally, as my vacation days go by, I will simply get used to it and my happiness will level out. According to the concept of hedonic adaptation, changes in experiences tend only to induce happiness temporarily as we get used to new circumstances (Frederick & Loewenstein, 1999).

Social Dimensions

Contrary to the *homo economicus* view of human motivation and decision making, BE does not assume that humans make choices in isolation, or to serve their own interest. Aside from cognitive and affective (emotional) dimensions, an important area of BE also considers social forces, in that decisions are made by individuals who are shaped by—and embedded in—social environments.

Trust and Dishonesty

Trust, which is one of the explanations for discrepancies between actual behavior and that predicted by a model of self-interested actors, makes social life possible and permeates economic relationships. It has been related to positive economic outcomes, such as macro-level economic growth (Zak & Knack, 2001) and micro-level intrinsic motivation and work performance (Falk & Kosfeld, 2006).

While trust can make us vulnerable, and thereby reflects risk preferences, it may also be the result of social preferences (Fehr, 2009). For instance, it has been linked to the concept of "betrayal aversion" (Bohnet, Greig, Herrmann, & Zeckhauser, 2008): People take greater risks when they are faced with a given probability of bad luck than the same probability of being cheated by another person.

In human relationships, deception is often considered a violation of trust, while in standard economics, dishonesty can be seen as a natural by-product of actors with self-interested

motives. However, the BE perspective does not consider humans to be more honest; rather, it takes a more social-psychological perspective by showing that dishonesty is not just about tradeoffs between external incentives (such as material gain) and costs (such as punishments). Dishonesty is the product of situations as well as both internal and external reward mechanisms, which often involves self-deception—the reframing of dishonest acts (e.g. not declaring all of your income to the tax authorities) in a way that makes them appear less dishonest (Mazar & Ariely, 2006).

Fairness and Reciprocity

Behavioral research on individual decision making in social contexts often relies on experimental games. Along with behavioral decision theory, behavioral game theory is the second major theoretical area found in behavioral economics. Typically, these games endow participants with rewards (e.g. tokens), which then change hands based on choices made by individuals within the rules of the game. This occurs over the course of one or more rounds of playing. The outcome of the game is evident in the way rewards are split between players, and the results often show that people have inequity aversion, i.e. they prefer fairness over inequality in many contexts (Fehr & Schmidt, 1999).

Fairness is related to a human desire for reciprocity, our tendency to return another's action with another equivalent action. Reciprocity, however, can have positive and negative aspects. As Ernst Fehr's work in this area has shown, people's responses to positive actions are often kinder than a self-interest model would predict, but on the flipside it can also lead to punitive responses to negative actions (Fehr & Gaechter, 2000). In the real world, charities sometimes use reciprocity to their advantage. For example, one field experiment investigating donation behavior showed that people who received a large gift with a donation solicitation letter had a 75 percent higher donation frequency compared to a 'no gift' baseline condition (Falk, 2004).

Social Norms

The sociologist Alvin Gouldner referred to reciprocity as a "generalized moral norm" (Gouldner, 1960). Social norms are implicit or explicit behavioral expectations or rules within a society or group of people (Dolan et al., 2010), and they are an important component of *identity economics*, which considers economic actions to be the result of both monetary incentives and people's self-concepts (Akerlof & Kranton, 2010). Our preferences are not simply a matter of basic tastes; they are also influenced by norms, as manifested in gender roles, for example.

Norms vary across cultures and contexts. For example, while market norms would dictate that payment is required for a good or service, social norms are quite different—would you offer to pay a family member for the meal that he has prepared for you (Ariely, 2008)? Sometimes social norms of exchange such as reciprocity and market norms co-exist in the same sphere. For instance, while market exchange norms dictate that I will charge a client for a consulting job, I may also give that client free advice, on some occasions, in the hope that the favor will be reciprocated in the future.

Social norms signal appropriate behavior or actions taken by the majority of people (although what is deemed 'appropriate' is itself subject to continual change). Along with informational feedback (e.g. the amount of money saved by not drinking alcohol), descriptive normative feedback (e.g. how one's drinking level compares to the national average) is often used in health behavior change programs (Diclemente et al., 2001), while non-profit organizations sometimes use normative information to affect donation levels. One study compared contribution levels for a public radio fundraiser in the US. When potential donors were provided with social information signaling norms (e.g. "We had another member, they contributed $300"), they saw up to a 12% increase in average contribution amounts (Shang & Croson, 2009).

Consistency and Commitment

Human susceptibility to feedback about social norms is related to our desire to maintain a positive view of who we are as a person. When the outcome of an action threatens this desire, we may change our behavior, though we often simply change our attitudes or beliefs. When this happens, we usually resort to 'rationalization', which is a form of cognitive dissonance reduction (Festinger, 1957). Unlike the rational choice view of human decision making, where preferences guide choices, rationalization implies the opposite: Sometimes preferences can justify actions after the fact (March, 1978). Cognitive dissonance theory is an illustration of the human need for a continuous and consistent self-image (Cialdini, 2008). In an effort to align future behavior, being consistent is best achieved by making a commitment, especially if it is done publicly. Thus, pre-committing to a goal is one of the most frequently applied behavioral devices to achieve positive change.

The 'Save More Tomorrow' program, aimed at helping employees save more money, illustrates a number of behavioral biases and remedies, including commitment (Thaler & Benartzi, 2004). The program gives employees the option of pre-committing to a gradual increase in their savings rate in the future, each time they get a raise. The program avoids the perception of loss that would be felt with a reduction in disposable income, because consumers commit to saving future increases in income. People's inertia makes it more likely that they stick with the program, because they have to opt out to leave.

Summary and Implications

Behavioral economics (BE) uses psychological experimentation to develop theories about human decision making and has identified a range of biases as a result of the way people think and feel. BE is trying to change the way economists think about people's perceptions of value and expressed preferences. According to BE, people are not always self-interested, benefits maximizing, and costs minimizing individuals with stable preferences—our thinking is subject to insufficient knowledge, feedback, and processing capability, which often involves uncertainty and is affected by the context in which we make decisions. Most of our choices are not the result of careful deliberation. We are influenced by readily available information in memory, automatically generated affect, and salient information in the environment. We also live in the moment, in that we tend to resist change, are poor predictors of future behavior, subject to distorted memory, and affected by physiological

and emotional states. Finally, we are social animals with social preferences, such as those expressed in trust, reciprocity and fairness; we are susceptible to social norms and a need for self-consistency.

Interdisciplinary Context

The field of BE is situated in a larger landscape of social and behavioral sciences, including cognitive and social psychology, and developments in the domain of neuroscience have opened up promising avenues for BE informed by better understanding of the human brain (Camerer, Loewenstein, & Prelec, 2005). It has been argued that BE would benefit from greater connections with other behavioral sciences, such as anthropology, which may be particularly important for domains that incorporate human interaction, especially behavioral game theory (Gintis, 2009). In a related vein, psychologists interested in the evolutionary origins of phenomena studied by behavioral economists have investigated behavioral biases in monkeys (Lakshminarayanan, Chen, & Santos, 2011).

Some evolutionary psychologists have challenged assumptions about the rationality that underlies BE, in that seemingly 'irrational' judgments and decisions may have been functionally adaptive in our ancestral environment. The use of heuristic shortcuts, for example, is an efficient means for humans to make use of limited knowledge and processing capabilities. According to Herbert Simon, people tend to make decisions by *satisficing* (a combination of sufficing and satisfying) rather than *optimizing* (Gigerenzer & Goldstein, 1996), where decisions are often simply good enough in light of the costs and constraints involved.

Evolutionary perspectives have also been applied to decision framing, showing that framing effects in a classic 'lives lost' versus 'lives saved' risky decision problem can change with the number of lives at stake. An "irrational" risk preference reversal effect is present when 600 or 6000 are involved, but it disappears when the number is reduced to 6 or 60. The evolutionary view holds that our thinking patterns evolved in hunter-gatherer environments that involved small groups (Rode & Wang, 2000).

Generalizability

More cross-cultural research will be needed to establish the degree of universality associated with behavioral theories (Etzioni, 2011). Research on analytic (Western European) versus holistic (East Asian) thinking styles implies that tensions between the psychology of *homo economicus* and *homo sapiens* should be much more pronounced in Western-European cultural regions, especially the US. In East-Asian cultures, reasoning tends to be influenced more by contexts, since people are more likely to use their intuition if it is in conflict with formal rationality and to accept variations in behavior across situations (Nisbett, Peng, Choi & Norenzayan, 2001). In collectivist cultures that foster interdependent self-construals, individuals see themselves as more connected to others, and unlike the selfish *homo economicus*, Eastern individuals are more likely to attend to other people and make decisions in the context of harmonious interdependence (Markus & Kitayama, 1991).

In both scholarly and applied areas of BE, and the behavioral sciences more generally, there has been an emerging interest in taking the study of decision making out of the (mostly American) university lab and into real-world settings. The usefulness of experiments limited to student samples has been questioned and online experimentation with diverse samples has become more common (Goodman, Cryder, & Cheema, 2013). Some authors have identified external validity (generalizability) issues when psychological studies initially performed in a lab are replicated in the field (Mitchell, 2012). In both business (Davenport, 2009) and the public sector (Haynes, Service, Goldacre, & Torgerson, 2012), a 'test and learn' approach based on field experimentation is now advocated as a valuable way to test behavioral hypotheses.

Applications: BE and Behavior Change

The implications of BE are far-reaching, and its ideas have been applied to various domains, including personal and public finance, health, energy, public choice, and marketing. Richard Thaler and Cass Sunstein became involved in US government policy as early as 2008, during Barack Obama's presidential campaign. In 2010, the UK government set up the 'Behavioural Insights Team' (BIT), a special unit dedicated to applying behavioral science to public policy and services. News broke in 2013 about a similar nudge unit being set up by the US government. The communications arm of the UK government, COI (now defunct), also took on board BE insights, in order to enhance their communications efforts. Practitioners at COI used BE ideas to complement traditional approaches gleaned from psychology that tend to focus on people's awareness, attitudes, and self-efficacy in producing behavior change (COI, 2009).

Most psychologists and economists would probably agree with Tim Harford's observation that BE appears to have become a catch-all term for any type of psychology applied to real-world problems (Hartford, 2014); many of the nudges tested by the UK's BIT, for example, are social-psychological in nature (e.g. attempting to increase organ donation rates through social proof). We do not need to rely on complex and often quite mathematical insights from BE to inspire behavior change policies, but the field of economics has always influenced public policy to a greater extent than psychology. The application of a 'behavioral economics' label to existing ideas from psychology appears to have proven effective. Despite BE's boundary disputes, the popularity of the behavioral sciences has widened practitioners' conceptual toolkit, encouraged research that is concerned with actual behavior, and begun to foster a 'test and learn' culture among governments and corporations alike.

When behavioral science is asked to tackle practical issues, conducting experiments prior to implementing interventions is indispensable. George Loewenstein and Peter Ubel have noted that behavioral economics is sometimes "asked to solve problems it wasn't meant to address" (Loewenstein & Ubel, 2010). Unhealthy eating and energy consumption problems, for example, can be dealt with effectively with traditional economic interventions, such as price and tax changes. BE therefore needs to be considered alongside rather than as a replacement for traditional interventions.

In the private sector, BE has reinvigorated practitioners' interest in psychology, particularly in marketing, consumer research, as well as business and policy consulting. Part 3 of this Guide provides a selection of papers written by practitioners in those areas.

Ethical issues

When BE is used to influence decisions, unavoidable questions about ethics arise. The liberal (or 'soft') paternalist approach of applying nudges in the public sphere argues that interventions occur for the good of the individual or society as a whole (Thaler & Sunstein, 2008). However, the practice and philosophy behind nudges are not without criticism, since interventions occur without the awareness of the public on both the level of policy implementation and the psychological processes involved (Dunt, 2014). Thaler and Sunstein maintain that changing choice architecture preserves individuals' freedom to choose and that there are no such things as neutrally presented choices in the first place. Clear rules of conduct and transparency will benefit nudgers in both public and private spheres. A recent opinion poll suggests that the global public is more supportive of the nudge approach (making behaviors more difficult or expensive) than 'shoving' (mandatory legislation) (Branson et al., 2012). The same survey also found public support for legislation against companies, for example in the area of promoting healthy food choices or acting in an environmentally sustainable way.

Debates about using BE (and behavioral science more generally) to influence consumers will have to consider consumer expectations about companies in contrast to governments, notions of free will, psychological processes in consumer decision making, and the wider context of marketing ethics and traditional marketing approaches. Do nudges directed at consumers undermine people's ability to choose freely, or do they merely steer consumers in a particular way (e.g. buying Brand A vs B) through actions that are already goal-directed (e.g. buying a soft drink)? Furthermore, does people's ability to reflect on their actions and their expectations of commercial self-interest in the marketplace make them sufficiently vigilant to control and correct their choices, if necessary? Finally, is BE applied to marketing radically new (most marketers would point out that it is not), or has it simply expanded managers' existing selling technique toolkit while allowing them to better understand human behavior and systematize marketing and research practice?

Selected Behavioral Economics Concepts

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Affect heuristic

The affect heuristic represents a reliance on good or bad feelings experienced in relation to a stimulus. Affect-based evaluations are quick, automatic, and rooted in experiential thought that is activated prior to reflective judgments (see **dual-system theory**) (Slovic, Finucane, Peters, & MacGregor, 2002). For example, experiential judgments are evident when people are influenced by risks framed in terms of counts (e.g. "of every 100 patients similar to Mr. Jones, 10 are estimated to commit an act of violence") more than an abstract but equivalent probability frame (e.g. "Patients similar to Mr. Jones are estimated to have a 10% chance of committing an act of violence to others") (Slovic, Monahan, & MacGregor, 2000). Affect-based judgments are more pronounced when people do not have the resources or time to reflect. Instead of considering risks and benefits independently, individuals with a negative attitude towards nuclear power may consider its benefits as low and risks as high, thereby leading to a more negative risk-benefit correlation than would be evident under conditions without time pressure (Finucane, Alhakami, Slovic, & Johnson, 2000). The affect heuristic has been used as a possible explanation for a range of consumer judgments, including the **zero price effect** (Samson & Voyer, 2012), and it is considered another general purpose heuristic similar to **availability** and **representativeness** in the sense that affect serves as an orienting mechanism akin to similarity and memorability (Kahneman and Frederick, 2002).

Anchoring (heuristic)

Anchoring is a particular form of **priming** effect whereby initial exposure to a number serves as a reference point and influences subsequent judgments about value. The process usually occurs without our awareness (Tversky & Kahneman, 1974), and sometimes it occurs when people's price perceptions are influenced by reference points. For example, the price of the first house shown to us by an estate agent may serve as an anchor and influence perceptions of houses subsequently presented to us (as relatively cheap or expensive). These effects have also been shown in consumer behavior whereby not only explicit slogans to buy more (e.g. "Buy *18* Snickers bars for your freezer"), but also purchase quantity limits (e.g. "limit of 12 per person") or 'expansion anchors' (e.g. "101 uses!") can increase purchase quantities (Wansink, Kent, & Hoch, 1998).

Asymmetrically dominated choice

See **Decoy effect**

Availability heuristic

Availability is a heuristic whereby people make judgments about the likelihood of an event based on how easily an example, instance, or case comes to mind. For example, investors may judge the quality of an investment based on information that was recently in the

news, ignoring other relevant facts (Tversky & Kahneman, 1974). Similarly, it has been shown that individuals with a greater ability to recall antidepressant advertising estimate the prevalence of depression to be higher than those with low recall (An, 2008), while less knowledgeable consumers use the ease with which they can recall low-price products as a cue to make judgments about overall store prices (Ofir, Raghubir, Brosh, Monroe, & Heiman, 2008). The availability of information in memory also underlies the **representativeness heuristic**.

Bias

See **Cognitive bias**

Bounded rationality

Bounded rationality is a concept proposed by Herbert Simon that challenges the notion of a view of human rationality rooted in mathematics (the computer metaphor in information processing). Rationality is bounded because there are limits to our thinking capacity, available information, and time (Simon, 1982). Bounded rationality is similar to the social-psychological concept that describes people as "cognitive misers" (Fiske & Taylor, 1991) and represents a fundamental idea about human psychology that underlies behavioral economics.

Certainty/possibility effects

Changes in the probability of gains or losses do not affect people's subjective evaluations in linear terms (see also **prospect theory** and **zero price effect**) (Tversky & Kahneman, 1981). For example, a move from a 50% to a 60% chance of winning a prize has a smaller emotional impact than a move from a 95% chance to a 100% (certainty) chance. Conversely, the move from a 0% chance to a 5% possibility of winning a prize is more attractive than a change from 5% to 10%, for example. People over-weight small probabilities, which explains lottery gambling—a small expense with the possibility of a big win.

Choice architecture

This term was coined by Thaler and Sunstein (2008) and refers to the practice of influencing choice by changing the manner in which options are presented to people. For example, this can be done by setting **defaults, framing,** or adding **decoy** options.

Choice overload

Also referred to as 'overchoice', the phenomenon of choice overload occurs as a result of too many choices being available to consumers. The application of **heuristics** in decision making becomes more likely with a greater number or complexity of choices. Overchoice has been associated with unhappiness (Schwartz, 2004), reduced self-control due to decision fatigue (Vohs et al., 2008), going with the **default** option, as well as choice deferral—avoiding making a decision altogether, such as not buying a product (Iyengar & Lepper, 2000).

Cognitive Bias

A cognitive bias (e.g. Ariely, 2008) is a systematic (non-random) error in thinking, in the sense that a judgment deviates from what would be considered desirable from the perspective of accepted norms or correct in terms of formal logic. The application of **heuristics** is often associated with cognitive biases, some of which, such as those arising from **availability** or **representativeness**, are 'cold' in the sense that they do not reflect a person's motivation and are instead the result of errors in information processing. Other cognitive biases, especially those that have a self-serving function (e.g. **optimism bias**), are more motivated. Finally, some biases, such as **confirmation bias**, can be motivated or unmotivated (Nickerson, 1998).

Commitment

Commitments or pre-commitments are often used as a tool to counteract people's lack of willpower and to achieve behavior change, such as in the areas of dieting or saving—the greater the cost of breaking a commitment, the more effective it is (Dolan et al., 2010). From the perspective of social psychology, individuals are motivated to maintain a consistent and positive self-image (Cialdini, 2008), and they are likely to keep commitments to avoid reputational damage (if they are made publicly) and/or cognitive dissonance (if they are made privately) (Festinger, 1957). The behavior change technique of 'goal setting' is related to making commitments (Strecher, 1995), while **reciprocity** involves an implicit commitment.

Confirmation bias

Confirmation bias occurs when people seek out or evaluate information in a way that fits with their existing thinking and preconceptions. The domain of science, where theories should advance based on both falsifying and supporting evidence, has not been immune to bias, which is often associated with people trying to bolster existing attitudes and beliefs. For example, a consumer who likes a particular brand and researches a new purchase may be motivated to seek out customer reviews on the internet that favor that brand. Confirmation bias has also been related to unmotivated processes, including primacy effects and **anchoring**, evident in a reliance on information that is encountered early in a process (Nickerson, 1998).

Decoy effect

Choices often occur relative to what is on offer rather than based on absolute **preferences**. The decoy effect is technically known as an 'asymmetrically dominated choice' and occurs when people's preference for one option over another changes as a result of adding a third (similar but less attractive) option. For example, people are more likely to choose an elegant pen over $6 in cash if there is a third option in the form of a less elegant pen (Bateman, Munro, & Poe, 2008).

Default (option)

Default options are pre-set courses of action that take effect if nothing is specified by the decision maker (Thaler & Sunstein, 2008), and setting defaults is an effective tool in **choice**

architecture when there is **inertia** or uncertainty in decision making (Samson, 2014). Requiring people to opt-out if they do not wish to donate their organs, for example, has been associated with higher donation rates (Johnson & Goldstein, 2003).

Discounting

See **Time discounting**

Diversification bias

People seek more variety when they choose multiple items for future consumption simultaneously than when they make choices sequentially, i.e. on an 'in the moment' basis. Diversification is non-optimal when people overestimate their need for diversity (Read & Loewenstein, 1995). In other words, sequential choices lead to greater experienced **utility**. For example, before going on vacation I may upload classical, rock and pop music to my MP3 player, but on the actual trip I may mostly end up listening to my favorite rock music. (See also **projection bias**).

Dual-system theory

Dual-system models of the human mind contrast automatic, fast, and non-conscious (System 1) with controlled, slow, and conscious (System 2) thinking. Many **heuristics** and **cognitive biases** studied by behavioral economists are the result of intuitions, impressions, or automatic thoughts generated by System 1 (Kahneman, 2011). Factors that make System 1's processes more dominant in decision making include cognitive busyness, distraction, time pressure, and positive mood, while System 2's processes tend to be enhanced when the decision involves an important object, has heightened personal relevance, and when the decision maker is held accountable by others (Samson & Voyer, 2012; Samson & Voyer, 2014).

(Hot-cold) Empathy gap

It is difficult for humans to predict how they will behave in the future. A hot-cold empathy gap occurs when people underestimate the influence of visceral states (e.g. being angry, in pain, or hungry) on their behavior or preferences. In medical decision making, for example, a hot-to-cold empathy gap may lead to undesirable treatment choices when cancer patients are asked to choose between treatment options right after being told about their diagnosis. Even low rates of adherence to drug regimens among people with bipolar disorder could be explained partly by something akin to a cold-to-hot empathy gap, while in a manic phase, patients have difficulty remembering what it is like to be depressed and stop taking their medication (Loewenstein, 2005).

Endowment effect

This bias occurs when we overvalue a good that we own, regardless of its objective market value (Kahneman, Knetsch, & Thaler, 1991). It is evident when people become relatively reluctant to part with a good they own for its cash equivalent, or if the amount that people are willing to pay for the good is lower than what they are willing to accept when selling the good. Put more simply, people place a greater value on things once they have established ownership, which is especially true for goods that wouldn't normally be bought

or sold on the market, usually items with symbolic, experiential, or emotional significance. The endowment effect is an illustration of the **status quo bias** and can be explained by **loss aversion**.

Framing effect

Choices can be worded in a way that highlights the positive or negative aspects of the same decision, leading to changes in their relative attractiveness. This technique was part of Tversky and Kahneman's development of **prospect theory**, which framed gambles in terms of losses or gains (Kahneman & Tversky, 1979). Different types of framing approaches have been identified, including risky choice framing (e.g. the risk of losing 10 out of 100 lives vs the opportunity to save 90 out of 100 lives), attribute framing (e.g. beef that is 95% lean vs 5% fat), and goal framing (e.g. motivating people by offering a $5 reward vs imposing a $5 penalty) (Levin, Schneider, & Gaeth, 1998).

(Behavioral) Game theory

Behavioral game theory is a mathematical approach to modeling behavior by analyzing the strategic decisions made by interacting players. Game theory in standard experimental economics operates under the assumption of the rational *homo economicus*, while behavioral game theory extends standard (analytical) game theory by taking into account how players feel about the payoffs other players receive, limits in strategic thinking, as well as the effects of learning (Camerer, 2003).

An early example of research that uncovered violations of standard assumptions of rationality occurred in the form of a simple *ultimatum game*. In the experiment, one player (the proposer/allocator) is endowed with a sum of money and asked to split it between him/herself and an anonymous player (the responder/recipient). The recipient may either accept the allocator's proposal or reject it, in which case neither of the players will receive anything. From a traditional game-theoretic perspective, the allocator should only offer a token amount and the recipient should accept it. However, results showed that most allocators offered more than just a token payment, and many went as far as offering an equal split. Some offers were declined by recipients, suggesting that they were willing to make a sacrifice when they felt that the offer was unfair (see also **inequity aversion**) (Guth, Schmittberger & Schwarz, 1982).

Habit

Habit is an automatic and rigid pattern of behavior in specific situations, which is usually acquired through repetition and develops through associative learning (see also System 1 in **dual-system theory**), when actions become paired repeatedly with a context or an event (Dolan et al., 2010). 'Habit loops' involve a cue that triggers an action, the actual behavior, and a reward. For example, habitual drinkers may come home after work (the cue), drink a beer (the behavior), and feel relaxed (the reward) (Duhigg, 2012). Behaviors may initially serve to attain a particular goal, but once the action is automatic and habitual, the goal loses its importance. For example, popcorn may habitually be eaten in the cinema despite the fact that it is stale (Wood & Neal, 2009). Habits can also be associated with **status quo bias**.

Halo effect

This concept has been developed in social psychology and refers to the finding that a global evaluation of a person sometimes influences people's perception of that person's other unrelated attributes. For example, a friendly person may be considered to have a nice physical appearance, whereas a cold person may be evaluated as less appealing (Nisbett & DeCamp Wilson, 1977). Halo effects have also been applied in other domains of psychology. For example, a study on the 'health halo' found that consumers tend to choose drinks, side dishes' and desserts with higher calorific content at fast-food restaurants that claim to be healthy (e.g. Subway) compared to others (e.g. McDonald's) (Chandon & Wansink, 2007).

Hedonic adaptation

People get used to changes in life experiences, a process which is referred to as 'hedonic adaptation' or the 'hedonic treadmill'. Just as the happiness that comes with the ownership of a new gadget or salary raise will wane over time, even the negative effect of life events such as bereavement or disability on subjective well-being tends to level off, to some extent (Frederick & Loewenstein, 1999). When this happens, people return to a relatively stable baseline of happiness. It has been suggested that the repetition of smaller positive experiences ('hedonic boosts'), such as exercise or religious practices, has a more lasting effect on our well-being than major life events (Mochon, Norton, & Ariely, 2008).

Herd behavior

This effect is evident when people do what others are doing instead of using their own information or making independent decisions. The idea of herding has a long history in philosophy and crowd psychology. It is particularly relevant in the domain of finance, where it has been discussed in relation to the collective irrationality of investors, including stock market bubbles (Banerjee, 1992). In other areas of decision making, such as politics, science, and popular culture, herd behavior is sometimes referred to as 'information cascades' (Bikhchandi, Hirschleifer, & Welch, 1992).

Heuristic

Heuristics, which are commonly defined as cognitive shortcuts or rules of thumb that simplify decisions, represent a process of substituting a difficult question with an easier one (Kahneman, 2003). Heuristics can also lead to **cognitive biases**. There are divisions regarding heuristics' relation to bias and rationality. In the 'fast and frugal' view, the application of heuristics (e.g. the recognition heuristic) is an "ecologically rational" strategy that makes best use of the limited information available to individuals (Goldstein and Gigerenzer, 2002). Furthermore, while heuristics such as **affect, availability,** and **representativeness** have a general purpose character, others developed in social and consumer psychology are more domain-specific, examples of which include brand name, price, and scarcity heuristics (Shah & Oppenheimer, 2008).

Hindsight bias

This bias, also referred to as the 'knew-it-all-along effect', is a frequently encountered judgment bias that is partly rooted in **availability** and **representativeness** heuristics. It happens when being given new information changes our recollection from an original thought to something different (Mazzoni & Vannucci, 2007). This bias can lead to distorted judgments about the probability of an event's occurrence, because the outcome of an event is perceived as if it had been predictable. It may also lead to distorted memory for judgments of factual knowledge. Hindsight bias can be a problem in legal decision making. In medical malpractice suits, for example, jurors' hindsight bias tends to increase with the severity of the outcome (e.g. injury or death) (Harley, 2007).

Hot and cold states

See **Empathy gap**

Hyperbolic discounting

See **Time discounting**

IKEA effect

While the **endowment effect** suggests that mere ownership of a product increases its value to individuals, the IKEA effect is evident when invested labor leads to inflated product valuation (Norton, Mochon, & Ariely, 2012). For example, experiments show that the monetary value assigned to the amateur creations of self-made goods is on a par with the value assigned to expert creations. Both experienced and novice do-it-yourselfers are susceptible to the IKEA effect. Research also demonstrates that the effect is not simply due to the amount of time spent on the creations, as dismantling a previously built product will make the effect disappear. The IKEA effect is particularly relevant today, given the shift from mass production to increasing customization and co-production of value. The effect has a range of possible explanations, such as positive feelings (including feelings of competence) that come with the successful completion of a task, a focus on the product's positive attributes, and the relationship between effort and liking. The *effort heuristic* is another concept that proposes a link between perceived effort and valuation (Kruger, Wirtz, Van Boven, & Altermatt, 2004).

Inequity aversion

Human resistance to inequitable outcomes is known as 'inequity aversion', which occurs when people prefer fairness and resist inequalities. In some instances, inequity aversion is disadvantageous, as people are willing to forego a gain, in order to prevent another person from receiving a superior reward. Inequity aversion has been studied through **experimental games**, such as dictator, ultimatum, and trust games (Fehr & Schmidt, 1999), and the concept has been applied in business and marketing, including research on customer responses to exclusive price promotions (Barone & Tirthankar, 2010).

Inertia

In behavioral economics, inertia is the endurance of a stable state associated with inaction and the concept of **status quo bias** (Madrian & Shea 2001). In social psychology the term is sometimes also used in relation to persistence in (or **commitments** to) attitudes and relationships.

Intertemporal choice

Intertemporal choice is a field of research concerned with the relative value people assign to payoffs at different points in time. It generally finds that people are biased towards the present (see **Present bias**) and tend to discount the future (see **Time discounting).**

Licensing effect

Also known as 'self-licensing', the licensing effect is evident when people allow themselves to do something bad (e.g. immoral) after doing something good (e.g. moral) first (Merritt, Effron & Monin, 2010). Well-publicized research in Canada asked participants to shop either in a green or a conventional online store. In one experiment, people who shopped in a green store shared less money in a dictator game (see **Game theory**). Another experiment allowed participants to lie (about their performance on a task) and cheat (take more money out of an envelope than they actually earned) and showed more lying and cheating among green shoppers (Mazar & Zhong, 2010).

Loss aversion

Loss aversion is an important BE concept associated with **prospect theory** and is encapsulated in the expression "losses loom larger than gains" (Kahneman & Tversky, 1979). It is thought that the pain of losing is psychologically about twice as powerful as the pleasure of gaining, and since people are more willing to take risks to avoid a loss, loss aversion can explain differences in risk-seeking versus aversion. Loss aversion has been used to explain the **endowment effect** and **sunk cost fallacy**, and it may also play a role in the **status quo bias**. The basic principle of loss aversion is sometimes applied in behavior change strategies, and it can explain why penalty **frames** are sometimes more effective than reward frames in motivating people (Gächter, Orzen, Renner, & Starmer, 2009). The website *Stickk* allows people to **commit** to a positive behavior change (e.g. give up junk food), which may be coupled the fear of loss—a cash penalty in the case of non-compliance.

Mental accounting

This concept refers to the fact that people treat money differently, depending on factors such as the money's origin and intended use, whereby they do not think of it in terms of formal accounting. A key term in mental accounting is that of *fungibility*, the fact that all money is the same and has no labels. According to the theory, people treat assets as less fungible than they really are, and they frame assets as belonging to current wealth, current income, or future income. Marginal propensity to consume (MPC: The proportion of a rise in disposable income that is consumed) is highest for money in the current income account and lowest for money in the future income account (Thaler, 1990). Consider unexpected

gains: Small windfalls (e.g. a $50 lottery win) are generally treated as 'current income' that is likely to be spent, whereas large windfalls (e.g. a $5,000 bonus at work) are considered 'wealth' (Thaler, 2008). Another example from mental accounting is credit card payments, which are treated differently than cash. According to the theory, credit cards decouple the purchase from the payment by separating and delaying the payment. Credit card spending is also attractive because on credit card bills individual items (e.g. a $50 expense) will lose their salience when they are seen as a small part of a larger amount due (e.g. $843) (Thaler, 1999). (See also **Partitioning** for ideas related to mental accounting.)

Optimism bias

People tend to overestimate the probability of positive events and underestimate the probability of negative events, a phenomenon known as optimism bias. For example, we may underestimate our risk of being in a car accident or getting cancer relative to other people. A number of factors can explain unrealistic optimism, including self-serving biases, perceived control, being in a good mood, etc. A possible cognitive factor that has been identified in optimism bias is the **representativeness heuristic** (Shepperd, Carroll, Grace & Terry, 2002).

Overconfidence (effect)

The overconfidence effect is observed when people's subjective confidence in their own ability is greater than their objective (actual) performance. It is frequently measured by having experimental participants answer general knowledge test questions. They are then asked to rate how confident they are in their answers on a scale. Overconfidence is measured by calculating the score for a person's average confidence rating relative to the actual proportion of questions answered correctly. Overconfidence is similar to **optimism bias** when confidence judgments are made relative to other people. A big range of issues have been attributed to overconfidence, including the high rates of entrepreneurs who enter a market despite the low chances of success (Moore & Healy, 2008). The *planning fallacy* is another example of overconfidence, where people underestimate the length of time it will take them to complete a task, often ignoring past experience (Buehler, Griffin, & Ross, 1994).

Planning fallacy

See **Overconfidence**

Partitioning

The rate of consumption can be decreased by physically partitioning resources into smaller units, for example cookies wrapped individually or money divided into several envelopes. When a resource is divided into smaller units (e.g. several packs of chips), consumers encounter additional decision points—a psychological hurdle encouraging them to stop and think. In addition to the cost incurred when resources are used, opening a partitioned pool of resources incurs a psychological transgression cost, such as feelings of guilt (Cheema & Soman, 2008). Related research has found that separate mental payment accounts (i.e. envelopes with money) can disrupt a shopping momentum effect that may

occur after an initial purchase (Dhar, Huber, & Khan, 2007). (For related ideas, see also **Mental accounting**).

Peak-end rule

According to the peak-end rule, our memory of past experience (pleasant or unpleasant) does not correspond to an average level of positive or negative feelings but to the most extreme point and the end of the episode (Kahneman & Tversky, 1999). The rule developed from findings that showed that evaluations of a past episode seem to be determined by a weighted average of 'snapshots' of an experience, thus neglecting its actual duration. These prototypical moments are related to the judgments made when people apply a **representativeness heuristic** (Frederickson & Kahneman, 1993).

Planning fallacy

See **Overconfidence**

Possibility effect

See **Certainty/possibility effects**

Preference

In economics, preferences are evident in theoretically optimal choices or real (behavioral) choices when people decide between alternatives. Preferences also imply an ordering of different options in terms of expected levels of happiness, gratification, **utility**, etc. (Arrow, 1958). Preferences are sometimes elicited in survey research, which may be associated with a range of problems, such as the hypothetical bias, when stated preferences are different from those expressed in actual choices. Armin Falk and colleagues have developed cross-culturally valid survey questions that are good predictors of preferences in behavioral experiments. These include questions about risk taking (see **Prospect theory**), social preferences (e.g. about **reciprocity**) and **time discounting** (Falk, Becker, Dohmen, Huffman, & Sunde, 2012).

Present bias

The present bias refers to the tendency of people to give stronger weight to payoffs that are closer to the present time when considering trade-offs between two future moments (O'Donoghue, &, Rabin, 1999). (See also **Time discounting.**)

Priming (Conceptual)

Conceptual priming is a technique and process applied in psychology that engages people in a task or exposes them to stimuli. The prime consists of meanings (e.g. words) that activate associated memories (schema, stereotypes, attitudes, etc.). This process may then influence people's performance on a subsequent task (Tulving, Schacter, & Stark, 1982). For example, one study primed consumers with words representing either 'prestige' US retail brands (Tiffany, Neiman Marcus, and Nordstrom) or 'thrift' brands (Wal-Mart, Kmart, and Dollar Store). In an ostensibly unrelated task, participants primed with prestige names then gave higher preference ratings to prestige as opposed to thrift product options (Chartrand, Huber, Shiv, & Tanner, 2008). Conceptual priming is different from processes

that do not rely on activating meanings, such as perceptual priming (priming similar forms), the mere exposure effect (repeated exposure increases liking), affective priming (subliminal exposure to stimuli, evoking positive or negative emotions) (Murphy & Zajonc, 1993), or the perception-behavior link (e.g. mimicry) (Chartrand & Bargh, 1999).

Projection bias

In behavioral economics, projection bias refers to people's assumption that their tastes or **preferences** will remain the same over time. For example, people may overestimate the positive impact of a career promotion due to an under-appreciation of **(hedonic) adaptation**, put above-optimal variety in their planning for future consumption (see **diversification bias**), or underestimate the future selling price of an item by not taking into account the **endowment effect**. Differences between present and future valuations should be particularly underappreciated for durable goods, where satisfaction levels are likely to fluctuate over time. Finally, consumers' under-appreciation of **habit** formation (associated with higher consumption levels over time) may lead to projection bias in planning for the future, such as retirement savings (Loewenstein, O'Donoghue, & Rabin, 2003).

Prospect theory

Prospect theory, which is a behavioral model that shows how people decide between alternatives that involve risk and uncertainty (e.g. % likelihood of gains or losses), demonstrates that people think in terms of expected **utility** relative to a reference point (e.g. current wealth) rather than absolute outcomes. Prospect theory was developed by **framing** risky choices, and it indicates that people are **loss-averse**, and since individuals dislike losses more than an equivalent gain, they are more willing to take risks, in order to avoid a loss. Due to the biased weighting of probabilities (see **Certainty/possibility effects**) and loss aversion, the theory leads to the following pattern in relation to risk (Kahneman, 2011):

	GAINS	LOSSES
HIGH PROBABILITY *Certainty Effect*	95% chance to win $10,000 Fear of disappointment RISK-AVERSE	95% chance to lose $10,000 Hope to avoid loss RISK-SEEKING
LOW PROBABILITY *Possibility Effect*	5% chance to win $10,000 Hope of large gain RISK-SEEKING	5% chance to lose $10,000 Fear of large loss RISK-AVERSE

Reciprocity

Reciprocity is a **social norm** that involves in-kind exchanges between people—responding to another's action with another equivalent action. It is usually positive (e.g. returning a favor), but it can also be negative (e.g. punishing a negative action) (Fehr & Gaechter, 2000). Reciprocity is an interesting concept from the perspective of BE, because it does not involve an economic exchange, and it has been studied by means of experimental games (see **Game theory**). Charities often take advantage of reciprocity when including small gifts in solicitation letters, while supermarkets try to get people to buy by offering free samples. Reciprocity is also used as a social influence tool in the form of 'reciprocal concessions', an approach also known as the 'door-in-the-face' technique, which occurs when a person makes an initial large request (e.g. to buy an expensive product), followed up by a smaller request (e.g. a less expensive option), if the initial request is denied by the responder. The responder then feels obligated to 'return the favor' by agreeing to the conceded request (Cialdini, Vincent, Lewis, Catalan, Wheeler, & Darby, 1975).

Representativeness heuristic

Representativeness is one of the major general purpose **heuristics**, along with **availability** and **affect**, and it is used when we judge the probability that an object or event A belongs to class B by looking at the degree to which A resembles B. When we do this, we neglect information about the general probability of B occurring (its base rate) (Kahneman & Tversky, 1972). Consider the following problem:

Bob is an opera fan who enjoys touring art museums when on holiday. Growing up, he enjoyed playing chess with family members and friends. Which situation is more likely?

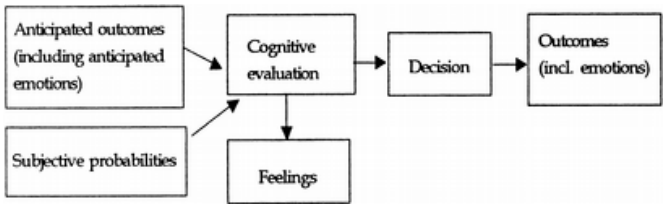
A. Bob plays trumpet for a major symphony orchestra
B. Bob is a farmer

A large proportion of people will choose A in the above problem, because Bob's description matches the stereotype we may hold about a classical musicians rather than farmers. In reality, the likelihood of B being true is far greater, because farmers make up a much larger proportion of the population.

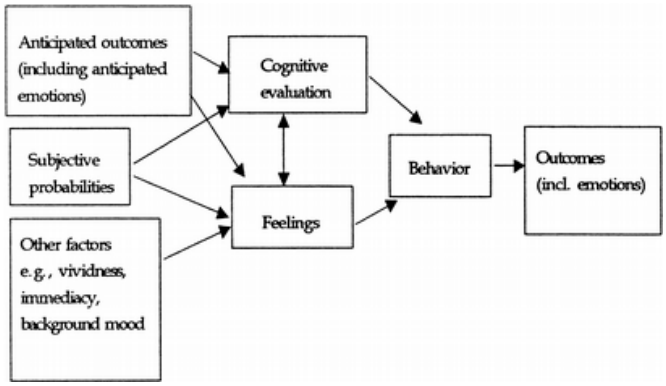
Similarity- or prototype-based evaluations more generally are a common cognitive shortcut across domains of life. For example, a consumer may infer a relatively high product quality from a store (generic) brand if its packaging is designed to resemble a national brand (Kardes, Posavac, & Cronley, 2004).

Risk-as-feelings

'Consequentialist' perspectives of decision making under risk or uncertainty (risky-choice theories, see e.g. **Prospect Theory**) tend to either focus on cognitive factors alone or consider emotions as an *anticipated* outcome of a decision:



The risk-as-feelings hypothesis (Loewenstein et al., 2001), on the other hand, also includes emotions as an *anticipatory* factor, namely feelings at the moment of decision making:



In contrast to theories such as the **affect heuristic**, where feelings play an informational role that help people decide between alternatives, risk-as-feelings can account for cases where choices (e.g. due to severe anxiety associated with traveling on airplanes) diverge from what individuals would objectively consider the best course of action.

Social norm

Social norms signal appropriate behavior and are classed as behavioral expectations or rules within a group of people (Dolan et al., 2010). Social norms of exchange, such as **reciprocity**, are different from market exchange norms (Ariely, 2008). Normative feedback (e.g. how one's energy consumption level compares to the regional average) is often used in behavior change programs (Allcott, 2011). Feedback utilized to induce behavior change can either be *descriptive*, representing majority behavior for the purpose of comparison, or *injunctive*, communicating approved or disapproved behavior. The latter is often more effective when an undesirable behavior is prevalent (Cialdini, 2008).

Social proof

The influence exerted by others on our behavior can be expressed as being either normative or informational. Normative influence implies conformity in order to be accepted or liked (Aronson, Wilson, & Akert, 2005), while informational influence occurs in ambiguous situations where we are uncertain about how to behave and look to others for information or cues. Social proof is an informational influence (or descriptive norm) and can lead to **herd behavior**. It is also sometimes referred to as a **heuristic**. Research suggests that receiving information about how others behave (social proof) leads to greater compliance among people from collectivist cultures, whereas information on the individual's past behavior (consistency/**commitment**) is associated with greater compliance for people from individualist cultures (Cialdini, Wosinska, Barrett, Butner, & Gornik-Durose, 1999).

Status quo bias

Status quo bias is evident when people prefer things to stay the same by doing nothing (see also **inertia**) or by sticking with a decision made previously (Samuelson, & Zeckhauser, 1988). This may happen even when only small transition costs are involved and the importance of the decision is great. Field data from university health plan enrolments, for example, show a large disparity in health plan choices between new and existing enrollees that could not be explained by unchanging **preferences.** One particular plan with significantly more favorable premiums and deductibles had a growing market share among new employees but a significantly lower share among older enrollees. Samuelson and Zeckhauser note that status quo bias is consistent with **loss aversion**, and that it could be psychologically explained by previously made **commitments** and **sunk cost** thinking, cognitive dissonance, a need to feel in control and regret avoidance. The latter is based on Kahneman and Tversky's observation that people feel greater regret for bad outcomes that result from new actions taken than for bad consequences that are the consequence of inaction (Kahneman & Tversky, 1982).

Sunk cost fallacy

Individuals commit the sunk cost fallacy when they continue a behavior or endeavor as a result of previously invested resources (time, money or effort) (Arkes & Blumer, 1985). This fallacy, which is related to **status quo bias**, can also be viewed as bias resulting from an ongoing **commitment**. For example, individuals sometimes order too much food and then over-eat 'just to get their money's worth'. Similarly, a person may have a $20 ticket to a concert and then drive for hours through a blizzard, just because s/he feels that s/he has to attend due to having made the initial investment. If the costs outweigh the benefits, the extra costs incurred (inconvenience, time or even money) are held in a different **mental account** than the one associated with the ticket transaction (Thaler, 1999).

System 1/2

See **Dual-system theory**

Time (temporal) discounting

Time discounting research, which investigates differences in the relative valuation placed on rewards (usually money or goods) at different points in time, by comparing its valuation at an earlier date with one for a later date (Frederick, Loewenstein, & O'Donoghue, 2002), shows that present rewards are weighted more heavily than future ones. Once rewards are very distant in time, they cease to be valuable. Delay discounting can be explained by impulsivity and a tendency for immediate gratification, and it is particularly evident for addictions such as nicotine (Bickel, Odum, & Madden, 1999). *Hyperbolic discounting* theory suggests that discounting is not time-consistent; it is neither linear nor occurs at a constant rate. It is usually studied by asking people questions such as "Would you rather receive £100 today or £120 a month from today?" or "Would you rather receive £100 a year from today or £120 a year and one month from today?" Results show that people are happier to wait an extra month for a larger reward when it is in the distant future. In hyperbolic

discounting, values placed on rewards decrease very rapidly for small delay periods and then fall more slowly for longer delays (Laibson, 1997).

Utility

In economics, utility refers to the benefits (satisfaction or happiness) consumers derive from a good, and it can be measured based on individuals' choices between alternatives or **preferences** revealed in their willingness to pay. Behavioral economists have questioned past assumptions that utility is always maximized, and they have worked with both traditional and new utility measures.

- *Expected utility* has been used in economics as well as game and decision theory, including **prospect theory**, and is based on choices with uncertain outcomes.
- *Experienced utility* relates to actual (hedonic) experiences associated with an outcome which is associated with theories on forecasting errors like the **diversification bias.**
- *Remembered utility* suggests that people's choices are also based on their memories of past events and is invoked in the **peak-end rule.**
- *Procedural utility* is relevant if people value not only outcomes, but also the processes that lead to these outcomes (Frey, Benz, & Stutzer, 2004).
- *Social utility* has been proposed in relation to **game theory**, where players not only always act self- interestedly, but also show concerns about the perceived intentions of other players and fairness (Camerer, 1997).

Zero price effect

The zero price effect suggests that traditional cost-benefits models cannot account for the psychological effect of a free good. A linear model assumes that changes in cost are the same at all price levels and benefits stay the same. As a result, a decrease in price will make a good equally more or less attractive at all price points. The zero price model, on the other hand, suggests that there will be an increase in a good's intrinsic value when the price is reduced to zero. The change in demand as a result of price changes is not linear, and there will be some switching from high-value to low-value goods. In addition, free goods have extra pulling power, as a reduction in price from $0.14 to zero is more powerful than a reduction from $0.15 to $0.01. A core psychological explanation for the zero price effect has been the **affect heuristic**, whereby options that have no downside (no cost) trigger a more positive affective response (Shampanier, Mazar, & Ariely, 2007).

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PART 2 – RESOURCES

Books Read by Behavioral Economics Group Members

Books with more than 500 ratings* (ranked by average rating)				
Title - Author(s)	Original Publication Year	Average (Mean) Rating*	Number of Ratings*	Number of Citations**
Influence: The Psychology of Persuasion - Robert B. Cialdini	1993	4.12	21,395	3763
The Fifth Discipline Fieldbook: Strategies and Tools for Building a Learning Organization - Peter M. Senge	1994	4.07	549	3892
Predictably Irrational: The Hidden Forces That Shape Our Decisions - Dan Ariely	2008	4.04	32,628	1789
The Emotional Brain: The Mysterious Underpinnings of Emotional Life - Joseph Ledoux	1998	4.03	716	8748
Thinking, Fast and Slow - Daniel Kahneman	2011	4.02	39,631	2656
Switch: How to Change Things When Change Is Hard - Chip Heath & Dan Heath	2010	4.01	14,330	255
Fooled by Randomness: The Hidden Role of Chance in Life and in the Markets - Nassim Nicholas Taleb	2001	4.01	14,230	743
How We Know What Isn't So: The Fallibility of Human Reason in Everyday Life - Thomas Gilovich	1991	3.99	898	1327
The Upside of Irrationality - Dan Ariely	2010	3.97	9,056	131
The Power of Habit: Why We Do What We Do in Life and Business - Charles Duhigg	2011	3.93	51,175	115
Incognito: The Secret Lives of the Brain - David Eagleman	2011	3.93	7,715	100
Decisive: How to Make Better Choices in Life and Work - Chip Heath & Dan Heath	2013	3.93	2,607	9
Drive: The Surprising Truth about What Motivates Us - Daniel H. Pink	2008	3.92	25,065	859
The Signal and the Noise: Why So Many Predictions Fail — but Some Don't - Nate Silver	2012	3.92	12,151	195
Willpower: Rediscovering the Greatest Human Strength - Roy F. Baumeister & John Tierney	2011	3.91	6,036	188
Yes!: 50 Scientifically Proven Ways to Be Persuasive - Noah Goldstein, Robert B. Cialdini & Steve J. Martin	2007	3.91	3,506	57
Irrational Exuberance - Robert J. Shiller	2000	3.91	1,742	4666
SuperFreakonomics: Global Cooling, Patriotic Prostitutes, and Why ... - Steven D. Levitt & Stephen J. Dubner	2009	3.88	51,019	164
Adapt: Why Success Always Starts with Failure - Tim Harford	2011	3.88	1,301	92
The Invisible Gorilla: How Our Intuitions Deceive Us - Christopher Chabris & Daniel Simons	2010	3.87	4,847	177
Freakonomics: A Rogue Economist Explores the Hidden Side of Everything - Steven D. Levitt & Stephen J. Dubner	2001	3.86	340,583	1191
The Honest Truth About Dishonesty: How We Lie to Everyone — Especially Ourselves - Dan Ariely	2012	3.86	3,905	61
Why We Buy: The Science of Shopping - Paco Underhill	1999	3.84	4,224	822
The Laws of Simplicity (Simplicity: Design, Technology, Business, Life) - John Maeda	2006	3.84	1,468	215
You Are Now Less Dumb: How to Conquer Mob Mentality, How to Buy Happiness, and ... David McRaney	2013	3.84	623	0
Blink: The Power of Thinking Without Thinking - Malcolm Gladwell	2001	3.82	192,108	2377
You Are Not So Smart: Why You Have Too Many Friends on Facebook, Why Your ... - David McRaney	2011	3.82	10,663	3
The Drunkard's Walk: How Randomness Rules Our Lives - Leonard Mlodinow	2008	3.82	7,771	191
Cognitive Surplus: Creativity and Generosity in a Connected Age - Clay Shirky	2010	3.82	2,150	484
The Black Swan: The Impact of the Highly Improbable - Nassim Nicholas Taleb	2007	3.81	29,644	3437
How We Decide - Jonah Lehrer	2009	3.81	20,066	272
The Paradox of Choice: Why More Is Less - Barry Schwartz	2004	3.81	10,288	1982
The Art of Choosing - Sheena Iyengar	2010	3.80	1,892	125
The Social Animal: The Hidden Sources of Love, Character, and Achievement - David Brooks	2011	3.76	9,450	156
Everything is Obvious: Once You Know the Answer - Duncan J. Watts	2011	3.76	1,092	107
The Art of Thinking Clearly: Better Thinking, Better Decisions - Rolf Dobelli	2013	3.76	1,983	2
The Undercover Economist - Tim Harford	2005	3.73	10,665	189
Nudge: Improving Decisions About Health, Wealth, and Happiness - Richard H. Thaler & Cass R. Sunstein	2008	3.72	13,835	3443
Sway: The Irresistible Pull of Irrational Behavior - Ori Brafman & Rom Brafman	2008	3.72	7,760	83
Grand Pursuit: The Story of Economic Genius - Sylvia Nasar	2011	3.72	606	30
Priceless: The Myth of Fair Value - William Poundstone	2010	3.68	529	18
Animal Spirits: How Human Psychology Drives the Economy, and... - George A. Akerlof & Robert J. Shiller	2009	3.64	1,320	1387
Buyology: Truth and Lies about Why We Buy - Martin Lindstrom	2008	3.63	4,254	161
More Sex Is Safer Sex: The Unconventional Wisdom of Economics - Steven E. Landsburg	2007	3.38	705	24

** Ratings retrieved from goodreads.com in April 2014*

*** Google Scholar citation, April 2014 (Note: does not reflect citations of individual chapters in edited books; excludes multiple Google Scholar items/versions [item with highest count only])*

Books with less than 500 ratings* (ranked by number of citations**)				
Title - Author(s)	Original Publication Year	Average (Mean) Rating*	Number of Ratings*	Number of Citations**
Micromotives and Macrobehavior - Thomas C. Schelling	1978	4.02	208	5015
Behavioral Game Theory: Experiments in Strategic Interaction - Colin F. Camerer	2003	3.71	38	4923
Choices, Values, and Frames - Daniel Kahneman & Amos Tversky	1984	4.34	96	2888
The Psychology of Judgment and Decision Making - Scott Plous	1993	4.08	142	1471
The Winner's Curse: Paradoxes and Anomalies of Economic Life - Richard H. Thaler	1991	3.75	81	1201
Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing - Hersh Shefrin	1999	3.63	54	1121
Advances in Behavioral Economics - Colin F. Camerer, George Loewenstein & Matthew Rabin	2004	4.08	24	770
Rational Choice: The Contrast Between Economics and Psychology - Robin M. Hogarth & Melvin W. Reder	1987	N/A	0	488
The Matching Law: Papers in Psychology and Economics - Richard Herrnstein	1997	3.00	4	369
Irrationality - Stuart Sutherland	1992	3.88	452	296
Management of the Absurd - Richard Farson	1996	3.75	93	233
Time and Decision: ... on Intertemporal Choice - George Loewenstein, Daniel Read and Roy F. Baumeister	2003	N/A	0	181
An Introduction to Behavioral Economics - Nick Wilkinson	2007	4.14	7	156
Preference, Belief, and Similarity: Selected Writings - Amos Tversky	2003	4.80	5	72
Behavioral Economics and Its Applications - Peter Diamond & Hannu Vartiainen	2007	3.80	5	61
Exotic Preferences: Behavioral Economics and Human Motivation - George Loewenstein	2007	4.00	5	52
The Luck Factor - Richard Wiseman	2003	3.76	378	44
Experiments With People: Revelations From Social Psychology - Robert P. Abelson, Aiden Gregg & Kurt P. Frey	2003	3.89	18	42
Herd: How to Change Mass Behaviour by Harnessing Our True Nature - Mark Earls	2009	3.72	142	39
Emotionomics: Leveraging Emotions for Business Success - Dan Hill	2009	3.44	32	36
The Buying Brain: Secrets for Selling to the Subconscious Mind - A. K. Pradeep	2010	3.40	65	32
More Than You Know: Finding Financial Wisdom in Unconventional Places - Michael J. Mauboussin	2007	4.03	203	31
Basic Instincts: Human Behaviour and the New Economics - Peter Lunn	2008	3.00	5	20
Behavioral Economics - Edward Cartwright	2011	3.00	4	18
Why Popcorn Costs So Much at the Movies: And Other Pricing Puzzles - Richard B. McKenzie	2008	3.25	100	18
The Science of Fear: How the Culture of Fear Manipulates Your Brain - Daniel Gardner	2008	4.02	98	16
The Little Book of Behavioral Investing: How Not to be Your Own Worst Enemy - James Montier	2010	3.93	140	14
Carrots and Sticks: Unlock the Power of Incentives to Get Things Done - Ian Ayres	2010	3.12	153	12
The Rational Animal: How Evolution Made Us Smarter Than We Think - Douglas T. Kenrick & Vladas Griskevicius	2013	3.93	60	12
Risk Savvy: How to Make Good Decisions - Gerd Gigerenzer	2013	3.86	14	7
Why Smart People Make Big Money Mistakes and How to Correct Them: ... - Gary Belsky & Thomas Gilovich	2000	3.87	270	4
Decoded: The Science Behind Why We Buy - Phil Barden	2013	4.00	27	2
Focus: Use Different Ways of Seeing the World for Success and Influence - Heidi Grant Halvorson & E. Tory Higgins	2013	3.60	52	1
Secrets of the Moneylab: How Behavioral Economics Can Improve Your Business - Kay-Yut Chen	2010	3.46	24	1
The Age of the Infovore: Succeeding in the Information Economy - Tyler Cowen	2010	3.33	60	1
Designing for Behavior Change: Applying Psychology and Behavioral Economics - Stephen Wendel	2013	4.18	11	0
Everything I Ever Needed to Know about Economics I Learned from Online Dating - Paul Oyer	2014	3.83	35	0
Far from Random: Using Investor Behavior and Trend Analysis to Forecast Market Movement - Richard Lehman	2009	2.60	5	0
Inspiring Sustainable Behaviour: 19 Ways to Ask for Change - Oliver Payne	2012	N/A	0	0
Make Your Brain Work: How to Maximize Your Efficiency, Productivity and ... - Amy Brann & Kogan Page	2013	3.45	20	0
Money Makes Me Crazy! A Prescription for Money Sanity - Ted McLyman	2011	2.50	2	0
The Psychology of Price: How to use price to increase demand, profit and customer satisfaction - Leigh Caldwell	2012	4.56	10	0
Thinking: The New Science of Decision-Making, Problem-Solving, and Prediction - John Brockman	2013	3.82	72	0

** Ratings retrieved from goodreads.com in April 2014*

*** Google Scholar citations, April 2014 (Note: does not reflect citations of individual chapters in edited books; excludes multiple Google Scholar items/versions [item with highest count only])*

Scholarly Journals with Behavioral Economics Content

Source: Journal websites (edited for length)

Economics Journals

Econometrica

2012 Impact Factor: 3.82

Econometrica publishes original articles in all branches of economics—theoretical and empirical, abstract and applied, providing wide-ranging coverage across the subject area. It promotes studies that aim at the unification of the theoretical-quantitative and the empirical-quantitative approaches to economic problems and which are penetrated by constructive and rigorous thinking. Furthermore, it explores a unique range of topics each year, from the frontier of theoretical developments in many new and important areas, through research on current and applied economic problems, through methodologically innovative, theoretical, and applied studies in econometrics.

Experimental Economics

2012 Impact Factor: 2.07

Experimental Economics is an international journal that serves the growing group of economists around the world who use laboratory methods. The journal invites high-quality papers in any area of experimental research in economics and related fields (i.e. accounting, finance, political science, and the psychology of decision making). State-of-the-art theoretical and econometric works motivated by experimental data are also encouraged. The journal will also consider articles with a primary focus on methodology or the replication of controversial findings.

Journal of Behavioral and Experimental Economics (formerly the Journal of Socio-Economics)

2012 Impact Factor: N/A

The *Journal of Behavioral and Experimental Economics* (formerly the *Journal of Socio-Economics*) welcomes submissions that deal with various economic topics but which also involve issues that are related to other social sciences, especially psychology, or the use of experimental methods of inquiry. Thus, contributions in behavioral economics, experimental economics, economic psychology, and judgment and decision making are especially welcome. The journal is open to different research methodologies, as long as they are relevant to the topic and employed rigorously. Possible methodologies include, for example, experiments,

surveys, empirical work, theoretical models, meta-analyses, case studies, and simulation-based analyses. Literature reviews that integrate findings from many studies are also welcome.

Journal of Economic Behavior & Organization

2012 Impact Factor: 1.07

The *Journal of Economic Behavior and Organization* is devoted to theoretical and empirical research concerning economic decision, organization and behavior and to economic change in all its aspects. Its specific purposes are to foster an improved understanding of how human cognitive, computational, and informational characteristics influence the working of economic organizations and market economies and how an economy's structural features lead to various types of micro and macro behaviors, through changing patterns of development and institutional evolution. Research aligned with these purposes, which explores the interrelations of economics with other disciplines such as biology, psychology, law, anthropology, sociology, finance, marketing, political science, and mathematics, is particularly welcome. The journal is eclectic as to the research method employed, so systematic observation and careful description, simulation modeling, and mathematical analysis are all within its purview. Empirical work, including controlled laboratory experimentation that probes close to the core of the issues in theoretical dispute, is encouraged.

Journal of Economic Perspectives

2012 Impact Factor: 3.49

The *Journal of Economic Perspectives (JEP)* attempts to fill a gap between the general interest press and most other academic economics journals. The journal aims to publish articles that will serve several goals: To synthesize and integrate lessons learned from active lines of economic research; to provide economic analysis of public policy issues; to encourage cross-fertilization of ideas among the fields of thinking; to offer readers an accessible source for state-of-the-art economic thinking; to suggest directions for future research; to provide insights and readings for classroom use; and to address issues relating to the economics profession. Articles appearing in the *JEP* are normally solicited by the editors and associate editors. Proposals for topics and authors should be directed to the journal office.

Quarterly Journal of Economics

2012 Impact Factor: 5.28

The *Quarterly Journal of Economics* is the oldest professional journal of economics in the English language. Edited at Harvard University's Department of Economics, it covers all aspects of the field.

Psychology Journals

Journal of Behavioral Decision Making

2012 Impact Factor: 2.16

The *Journal of Behavioral Decision Making (JBDM)* is a journal that emphasizes psychological approaches and methods. The journal publishes manuscripts that develop significant psychological theories on fundamental decision processes, or report and interpret previously unknown phenomena. It focuses on publishing original empirical reports, critical review papers, theoretical analyses, methodological contributions, and book reviews. The objective of the journal is to stimulate, facilitate, and present high-quality behavioral research on decision making. Studies of behavioral decision making in real-life contexts are encouraged. Papers published in *JBDM* encompass individual, interpersonal and group decision making, including consumer behavior and behavioral economics.

Journal of Consumer Psychology

2012 Impact Factor: 2.73

The *Journal of Consumer Psychology (JCP)* publishes top-quality research articles that contribute both theoretically and empirically to our understanding of the psychology of consumer behavior. *JCP* is the official journal of the Society for Consumer Psychology, Division 23 of the American Psychological Association. It publishes articles in areas such as consumer judgment and decision processes, consumer needs, attitude formation and change, reactions to persuasive communications, consumption experiences, consumer information processing, consumer-brand relationships, affective, cognitive, and motivational determinants of consumer behavior, family and group decision processes, and cultural and individual differences in consumer behavior. Most published articles are likely to report new empirical findings, obtained either in the laboratory or in field experiments that contribute to existing theory in both consumer research and psychology. However, results of survey research, correlational studies, and other methodological paradigms are also welcomed to the extent that the findings extend our psychological understanding of consumer behavior. Theoretical and/or review articles integrating existing bodies of research and providing new insights into the underpinnings of consumer behavior and consumer decision processes are also encouraged.

Journal of Economic Psychology

2012 Impact Factor: 1.08

The *Journal of Economic Psychology* aims to present research that will improve understanding of behavioral, especially socio-psychological, aspects of economic phenomena and processes. The journal seeks to be a channel for the increased interest in using behavioral science methods for the study of economic behavior, and so to contribute to better solutions for societal problems, by stimulating new approaches and theorizations about economic affairs. Economic psychology as a discipline studies the psychological mechanisms that underlie consumption and other economic behavior. It deals with preferences, choices, decisions, and factors influencing these elements, as well as the consequences of decisions and choices with respect to the satisfaction of needs. This includes the impact of external economic phenomena upon human behavior and well-being. Studies in economic psychology may relate to different levels of aggregation, from the household and the individual consumer to the macro level of whole nations. Economic behavior in connection with inflation, unemployment, taxation, economic development, consumer information, and economic behavior in the marketplace are thus the major fields of interest. Special issues of the journal may be devoted to themes of particular interest. The journal encourages exchanges of information between researchers and practitioners by acting as a forum for discussion and debates on issues in both theoretical and applied research.

Journal of Personality and Social Psychology

2012 Impact Factor: 4.88

The *Journal of Personality and Social Psychology* publishes original papers in all areas of personality and social psychology and emphasizes empirical reports, but it may also include specialized theoretical, methodological, and review papers. The journal's *Attitudes and Social Cognition* section addresses those domains of social behavior in which cognition plays a major role, including the interface of cognition with overt behavior, affect, and motivation. Among topics covered are attitudes, attributions, and stereotypes, self-regulation, and the origins and consequences of moods and emotions insofar as these interact with cognition. *Interpersonal Relations and Group Processes* focuses on psychological and structural features of interaction in dyads and groups. Topics include group and organizational processes such as social influence, group decision making and task performance, pro-social behavior, and other types of social behavior. The *Personality Processes and Individual Differences* section publishes research on all aspects of personality psychology and includes studies of individual differences and basic processes in behavior, emotions, health, and motivation.

Judgment and Decision Making

2012 Impact Factor: 1.86

Judgment and Decision Making is the journal of the Society for Judgment and Decision Making (SJDM) and the European Association for Decision Making (EADM). It is open access and published on the World Wide Web. Submitted articles should be original and relevant to the tradition of research in the field represented by SJDM and EADM. Relevant articles deal with normative, descriptive, and/or prescriptive analyses of human judgments and decisions. These include, but are not limited to, experimental studies of judgments of hypothetical scenarios; experimental economic approaches to individual and group behavior; use of physiological methods to understand human judgments and decisions; discussions of normative models such as utility theory; and applications of relevant theory to medicine, law, consumer behavior, business, public choice, and public economics.

Organizational Behavior and Human Decision Processes

2012 Impact Factor: 2.82

Organizational Behavior and Human Decision Processes publishes fundamental research in organizational behavior, organizational psychology, and human cognition, judgment, and decision-making. The journal features articles that present original empirical research, theory development, meta-analysis, and methodological advancements relevant to the substantive domains served by the journal. Topics covered by the journal include perception, cognition, judgment, attitudes, emotion, well-being, motivation, choice, and performance. The journal is interested in articles that investigate these topics as they pertain to individuals, dyads, groups, and other social collectives. For each topic, the journal places a premium on articles that make fundamental and substantial contributions to understanding psychological processes relevant to human attitudes, cognitions, and behavior in organizations.

Psychological Science

2012 Impact Factor: 4.54

Psychological Science, the flagship journal of the Association for Psychological Science (previously the American Psychological Society), is the highest ranked empirical journal in psychology. The journal publishes cutting-edge research articles, short reports, and research reports spanning the entire spectrum of the science of psychology. This journal is the source for the latest findings in cognitive, social, developmental, and health psychology, as well as behavioral neuroscience and biopsychology. *Psychological Science* routinely features studies employing novel research methodologies and the newest, most innovative techniques of analysis.

Marketing/Management Journals

Management Science

2012 Impact Factor: 1.86

Management Science publishes scientific research on the practice of management. Within its scope are all aspects of management related to strategy, entrepreneurship, innovation, information technology, and organizations as well as all functional areas of business, such as accounting, finance, marketing, and operations. The journal includes studies on organizational, managerial, and individual decision making, from both normative and descriptive perspectives.

Marketing Science

2012 Impact Factor: 2.20

Marketing Science is an Institute for Operations Research and the Management Sciences (INFORMS) publication that focuses on empirical and theoretical quantitative research in marketing. *Marketing Science* covers a range of topics, including advertising, marketing research, pricing and promotions, and targetability. Other subjects include consumer perception models and those relating to the subject of purchasing behavior.

Journal of Marketing Research

2012 Impact Factor: 2.25

The *Journal of Marketing Research (JMR)* publishes manuscripts that address research in marketing and marketing research practice. The journal publishes articles representing the entire spectrum of research in marketing, ranging from analytical models of marketing phenomena to descriptive and case studies. Most of the research currently published in *JMR* fits into the following two categories: (1) Empirical research that tests a theory of consumer or firm behavior in the marketplace and (2) methodological research that presents new approaches for analyzing data or addressing marketing research problems.

Multidisciplinary Journals

Decision

2012 Impact Factor: N/A

Decision is a multidisciplinary research journal focused on a theoretical understanding of neural, cognitive, social, and economic aspects of human judgment and decision-making

behavior. The journal publishes articles on all areas related to judgment and decision-making research, including probabilistic inference, prediction, evaluation, choice, decisions under risk or uncertainty, and economic games. The journal is interested in articles that present new theories or new empirical research addressing theoretical issues, or both. To achieve this goal, *Decision* will publish three types of articles: Long articles that make major theoretical contributions, shorter articles that make major empirical contributions by addressing important theoretical issues, and brief review articles that target rapidly rising theoretical trends or new theoretical topics in decision making.

Games and Economic Behavior

2012 Impact Factor: 1.00

Games and Economic Behavior facilitates cross-fertilization between theories and applications of game theoretic reasoning. It publishes papers in interdisciplinary studies within the social, biological, and mathematical sciences. Research areas include game theory, economics, political science, biology, computer science, mathematics, and psychology.

International Journal of Applied Behavioral Economics

2012 Impact Factor: N/A

The scope of the *International Journal of Applied Behavioral Economics* encompasses how preferences, attitudes, and behavioral issues influence economic agents involved in business and organizations. Special attention is given to the impact that globalization and digitalization have on businesses and organizations from a behavioral point of view. An interdisciplinary approach is required, as economics, psychology, sociology, and anthropology are domains that contribute to understanding complex economic behavior, its triggers, and its practical implications. The journal encourages practice-oriented research papers from academics and reflective papers from practitioners, as well as case studies. Both quantitative and qualitative research papers are welcomed, as well as research that uses innovative methodologies to explore new insights in the field and theory.

Journal of Behavioural Economics, Finance, Entrepreneurship, Accounting and Transport

2012 Impact Factor: N/A

The *Journal of Behavioural Economics, Finance, Entrepreneurship, Accounting and Transport* publishes research papers around behavioural issues in economics, finance, entrepreneurship, accounting, and transport. It aims to discuss the effect of the emergence of the behavioural theory in different fields of research. It is the first journal to introduce the concepts of 'Behavioural Entrepreneurship' and 'Behavioural Transport', and it seeks to publish articles that focus on the role of investors, managers, and entrepreneurs' psychology in the decision

making process. The journal helps us to understand 'why' and 'how' behavioural economic agents make sub-optimal decisions, which can explain why economic and corporate decisions are far from the rational choice.

Journal of Consumer Research

2012 Impact Factor: 3.54

The *Journal of Consumer Research (JCR)* publishes scholarly research that describes and explains consumer behavior. Empirical, theoretical, and methodological articles spanning fields such as psychology, marketing, sociology, economics, communications, and anthropology are featured in this interdisciplinary journal. The primary thrust of *JCR* is academic rather than managerial, with topics ranging from micro-level processes (such as brand choice) to more macro-level issues (such as the development of materialistic values).

Mind & Society

2012 Impact Factor: N/A

Mind & Society examines the relationships between mental and socio-economic phenomena. It is the official journal of the Italian-based Rosselli Foundation. Priority is given to papers that explore the relationships between mind and action and between action and socio-economic phenomena. This includes the following topics: The concept of the mind of a social actor; cognitive models of reasoning; decision making and action; computational and neural models of socio-economic phenomena; and related topics. The international journal takes an interdisciplinary approach and publishes papers from many academic disciplines, including the philosophy and methodology of social sciences, economics, decision making, sociology, cognitive and social psychology, epistemology, cognitive anthropology, artificial intelligence, neural modeling, and political science. Papers must share the journal's epistemological vision—namely, the explanation of socio-economic phenomena through individual actions, decision making and reasoning processes—or at least refer to its content priorities. *Mind & Society* publishes papers that report original results of empirical research or theoretical analysis.

Psychology and Marketing

2012 Impact Factor: 1.31

Psychology & Marketing (P&M) publishes original research and review articles dealing with the application of psychological theories and techniques to marketing. As an interdisciplinary journal, *P&M* serves practitioners and academicians in the fields of psychology and marketing and is an appropriate outlet for articles designed to be of interest, concern, and applied value to its audience of scholars and professionals. Manuscripts that use psychological theory to understand better the various aspects of the marketing of products and services are

appropriate for submission. *P&M* fosters the exploration of marketing phenomena spanning the entire spectrum of offerings (products & services), price, promotion (advertising, publicity, public relations, and personal selling), place (channels and distribution), and politics (public opinion, law, and ethics), all revolving around the individual and collective psyche of consumers. Manuscripts may be conceptual or empirical in nature, and also feature quantitative and/or qualitative analysis. They may deal with business-to-consumer, business-to-business, and not-for-profit business and organizational issues. Also appropriate for submission to *P&M* are case studies, cross-cultural research, and psychological studies or profiles of individuals or groups with clear marketing implications.

Review of Behavioral Economics

2012 Impact Factor: N/A

The *Review of Behavioral Economics (ROBE)* seeks to extend and develop the study of behavioral economics. The journal encourages a transdisciplinary and pluralistic perspective in the tradition of the late Herbert A. Simon, long recognized as the founder of modern behavioral economics, for whom the concepts of bounded rationality and satisficing were based on psychological, cognitive, and computational limits of human knowledge and behavior, the decision making environment, and the evolutionary capabilities of the human being. *ROBE* sees behavioral economics embedded in a broader behavioral science that includes most of the social sciences, as well as aspects of the natural and mathematical sciences. The journal is open to a variety of approaches and methods, both mainstream and non-orthodox, as well as theoretical, empirical, and narrative. *ROBE* will also publish special issues and target articles with comments from time to time as appropriate.

Postgraduate Programs in Behavioral Economics and Behavioral/Decision Science (Taught in English)

United States

California Institute of Technology (Caltech)	**PhD in Behavioral & Social Neuroscience**
Carnegie Mellon University	**PhD in Social and Decision Science** **(see also Dynamic Decision Making Laboratory and Center for Behavioral and Decision Research)**
Cornell University (Charles H. Dyson School of Applied Economics and Management)	**PhD in Applied Economics and Management** **Master of Professional Studies (MPS) in Applied Behavioral Economics and Individual Choice** **(see also Cornell Center for Behavioral Economics in Child Nutrition Programs)**
Duke University (Fuqua School of Business)	**MBA and PhD in Marketing** **PhD in Decision Sciences**
Harvard University	**PhD in Economics** **Master (MPH) and Doctor of Public Health (DrPH)**
Johns Hopkins University	**PhD in Social and Behavioral Sciences**
Massachusetts Institute of Technology	**PhDs in Management, Economics and Brain & Cognitive Sciences** **(see also MIT Sloan Neuroeconomics Laboratory)**
New York University	**PhDs in Economics, Politics and Psychology** **(see also Center for Experimental Social Science)**
Ohio State University	**PhD in Psychology (Decision Psychology)** **(see also Behavioral Decision Making Initiative)**
Stanford University	**MS and PhD in Management Science and Engineering** **(see also Stanford Decisions and Ethics Center)**
University of Arizona	**PhD in Economics** **(see also Institute for Behavioral Economics)**
University of Chicago (Booth School of Business)	**PhD in Behavioral Science** **(see also Center for Decision Research)**

University of California, Berkeley	**PhDs in Marketing, Psychology and Economics (see also Berkeley Decision Science Research Group)**
University of California, San Diego (Rady School of Management)	**MBA and PhD in Management (see also Rady Behavioral Lab)**
University of California, Santa Barbara	**MA and PhD in Economics (see also Experimental and Behavioral Economics Laboratory)**
University of Michigan	**Master of Applied Economics (MAE) and PhD in Economics**
University of Oregon	**PhD in Psychology (see also Institute of Cognitive and Decision Sciences)**
University of Pittsburgh	**PhD in Marketing and Business Economics**
University of Wisconsin	**MS and PhD in Human Ecology: Consumer Behavior and Family Economics (Consumer Science) (see also Behavioral Research Insights Through Experiments Lab)**

United Kingdom

City University London	**MSc in Behavioural Economics PhDs in Economics and Psychology (see also Decision Making and Behavioural Economics Research Group)**
London School of Economics and Political Science	**MSc in Management Science (Decision Sciences) Executive MSc in Behavioural Science PhDs in Management Science, Social Policy, Economics and Psychology (see also LSE Behavioural Research Lab)**
University College London	**MSc in Cognitive and Decision Sciences PhD in Experimental Psychology**
University of East Anglia	**MSc in Experimental Economics PhDs in Economics and Psychology (see also Centre for Behavioural and Experimental Social Science)**

University of Essex	**MSc in Behavioural Economics**
University of Nottingham	**MSc in Behavioural Economics** **PhD in Economics** **(see also Centre for Decision Research and Experimental Economics)**
University of Stirling	**MSc in Behavioural Science for Management** **PhDs in Economics, Management and Psychology** **(see also Behavioural Science Centre)**
University of Warwick	**MSc in Behavioural and Economic Science** **PhD in Psychology (Behavioural Science Group)** **(see also Decision Research at Warwick)**

The Netherlands

Erasmus University Rotterdam	**Master in Economics and Business (Behavioural Economics specialisation)** **PhD in Economics and Management**
Leiden University	**Master in Psychology (Economic and Consumer Psychology)**
Maastricht University	**Master in Human Decision Science**
Radboud University Nijmegen	**Master in Behavioural Science**
Tilburg University	**Master in Social Psychology (Economic Psychology Track)** **Research Master and PhDs in Economics, Business and Social & Behavioural Sciences** **(see also Tilburg Institute for Behavioural Economics Research)**
University of Amsterdam (Amsterdam Business School / School of Economics)	**Master and PhD in Economics** **(Research Priority Area Behavioural Economics)**

Other Europe

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International Max Planck Research School on Adapting Behaviour in a Fundamentally Uncertain World (Uncertainty School), Berlin, Germany	**PhDs in Economics, Law and Psychology**
University of Bonn (Bonn Graduate School of Economics), Germany	**PhD in Economics**
University of Paris (Sorbonne), France	**Master in Economics & Psychology**
University of Kassel, Germany	**MSc in Economic Behaviour and Governance**
University of Zurich (Zurich Graduate School of Economics), Switzerland	**PhD in Economics and Neuroeconomics (see also Laboratory for Experimental and Behavioral Economics)**

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PART 3 – APPLIED PERSPECTIVES

Psychology and Behavioral Economics in Practice

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Nudging in the World of International Policymaking

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Introduction: from homo economicus to homo behaviouralis?

In most countries consumer protection policies have been designed and implemented on the basis of an explicit or implicit assumption that the average consumer is rational and that more information leads to better decision making, which in turn increases consumer welfare. This approach assumes that consumers are willing, and competent to deal with the information provided, to take informed rational decisions and to pursue their information-based rights. For example, in rulings about unfair commercial practices (as defined by Directive 2005/29/EC), the European court of Justice made use of a concept of the average consumer that is substantially biased towards Homo Economicus (Trzaskowski, 2011).

A major shift has occurred with the 'behavioural turn' in policy-making following the publication of *Nudge* (Thaler & Sunstein, 2008), when '*many psychologists discovered that the name of their trade had changed even if its content had not*' (Kahneman, 2013, pp. viii-ix). Sunstein became Director of the Office of Information and Regulatory Affairs under President Obama, and Thaler became an advisor to the UK Behavioural Insight Team (BIT) (Kahneman, 2013, p. viii). In the UK, the Institute for Government published the discussion paper *Mindspace* (Dolan *et al.*, 2010), drawing heavily on the 'nudge' philosophy. This was followed by a programme with examples of nudging in health (Behavioural Insights Team, 2011). In 2009 the US National Institutes of Health has made the development of a "science of behaviour change" a priority (Blumenthal-Barby & Burroughs, 2012). A report about the use of nudge techniques for health was published by the Centre for Strategic Analysis of the French government (Oullier & Sauneron, 2010).

Understanding human decision-making is at the foundation of this approach, in which policy is designed to modify the choice architecture of individuals. In other words, interventions are designed to modify the context in which a decision takes place without changing the constraints faced and thus retaining freedom of choice. This is the philosophy of "libertarian paternalism" - by not affecting the options available in the choice set it can be deemed to be libertarian from a consequentialist point of view, while it is paternalistic in the sense of trying to induce 'better' choices (Thaler & Sunstein, 2003). It leverages the heuristics and biases that behavioural scholars have identified in their critiques of rational choice.

Heuristics are mental shortcuts used for fast processing of information, which can induce systematic errors of judgement and create or influence gaps between planned intentions and realised actions. This gap is also explained with the distinction between *System 1* and *System 2* as two interacting components of the mind. System 2 follows controlled

processes. It is slow, effortful, conscious, rule-based and can also be employed to monitor the quality of the answer provided by System 1. By contrast, System 1 is automatic, affective and heuristic-based, it quickly proposes intuitive answers to problems as they arise, requires less effort and cognitive engagement, and can be triggered by environmental and contextual cues. Another dimension partially overlapping with the distinction between system 1 and system 2 is that of 'hot' and 'cold' affect and cognition (Samson & Voyer, 2012; Strack & Deutsch, 2004; Strack *et al.*, 2006). Hot cognition involves a heightened response to stimuli, one that is driven largely by emotion. In contrast, cold cognition refers to unemotional, painstaking thought. The typical agent of standard economic theory uses only system 2 and is cold and unemotionally aroused in action, making fully informed, controlled, and considered choices. Hence, from the behavioural perspective, information does not necessarily produce better decisions, since contextual cues affect behaviour without conscious awareness. We eat too much and unhealthily even if we plan to do the opposite; we want financial security in old age but we can't resist buying a new car tomorrow.

In 2012 also the European Commission started to explore and test policy options using behavioural experiments (van Bavel *et al.*, 2013). In this chapter we outline some general and operational considerations based on the experience we have accumulated conducting several experimental behavioural studies for the Directorate General Health and Consumer of the European Commission (EC). These experimental behavioural studies included: a) a first test followed by a replication to assess the effectiveness of the new Combined Warning (text warnings and picture) that will appear on tobacco products in Europe in 2014 (we carried out two laboratory experiments and two online experiments; b) a laboratory experiment and an online experiment to test the effectiveness of CO_2 labels for vehicles; c) a laboratory experiment and an one online experiment to test measures aimed at protecting consumers of online gambling services; d) a behavioural study, currently under design to assess the effect of online marketing practices such as 'advergames' and ' in-app purchase' on children aged 8-11 years old. This paper proceeds as follows. In Section 2 we elaborate some more general and theoretical considerations that also have practical relevance. In Section 3, we introduce a taxonomy of nudges and of their applicability in different contexts. Section 4 concludes our contribution presenting practical and pragmatic considerations for policy related behavioural research.

Homo Behaviouralis: not a magic bullet

Libertarian paternalism aims at balancing the preservation of autonomy (consumer sovereignty) and the need to spur consumer behaviour towards a properly defined objective that consumers are not deemed able to meet (paternalism). The theory does not provide a universal criterion for the latter aim, which is an assessment that policy makers and courts must make. In fact, behavioural economics and the nudge movement that sprang from it are descriptive and empirical (Fischhoff & Eggers, 2013; Trzaskowski, 2011) and focus on means, not ends. Thus they do not help to draw the line between the legitimate influence of commercial activities and the illegal distortion of the average consumer's behaviour.

There is no minimal criterion to constrain nudging as a valid method of intervention that addresses all normative and ethical concerns, because the scientific grounding of nudging eliminates the possibility of its existence in the first place. By assuming preference ordering as exogenous, rational theory posits that a voluntary transaction performed by an agent is an expression of his or her free will and can be 'objectively' deemed as an improvement. This becomes an intellectually appealing normative criterion since, if preference ordering is exogenous, we can ask the following questions to evaluate two allocations A and B: if put in the condition, would agents perform the transactions necessary to move from A to B or vice versa? Since such a transaction is voluntary, it will be put in place only if someone is better off and the other at least not worse off. This is the Pareto criterion. Yet, the theoretical and empirical analysis of behavioural economists and psychologists collapses the normative edifice with the implication that 'we cannot avoid making value judgements' (Lichtenberg, 2013, p. 497). Since choice is context dependent (Pesendorfer, 2006) in the sense that the choice set influences the preferences, these cannot be assumed to be exogenous. Different allocations imply different preferences and thus lack of invariance of the criterion used to evaluate the alternatives. It would be as if in comparing two lengths the baseline metre changes. To give another example, dynamically inconsistent behaviour (e.g. addiction) is a problem of the dual self, between the preferences of morning, when you plan to quit smoking, and those of the evening when you buy cigarettes. Which preference system should be privileged?

Our core point is that there is no magic solution. Any form of policy intervention will impose a criterion against someone's will (it will always be the case) and democracy requires: a) transparency from the political system in terms of the values selected in deciding and designing an intervention; b) and at least an evidence based justification of choice. Overt and explicit coercion by 'nudgers' is arguably better than covert manipulation by those designing environmental and contextual cues. This key point is not always explicit and clear in the mind of the policy makers requesting a behavioural study. In this respect, we see the importance of combining a discovery and a selection phase in research. This would improve the quality of the outputs, educate policy clients, and better manage expectations of and decisions informed by experimental behavioural studies.

Following Fischoff & Eggers (2013) we envisage the ideal policy supporting behavioural research as comprising three steps (not necessarily by the same team, nor externalized by the policymaker). In a study involving consumer choice X the three steps should be:

Normative analysis. Identify, using consolidated theory and evidence, the possible outcomes of choices X and decision makers' values to weight them.

Empirical analysis. Predict, using behavioural experiments, the choices X that consumers would actually make, under the conditions created by possible policies.

Prescriptive analysis. Characterise the gap between the normative ideal and the descriptive reality, with each policy option.

Evidently, to be coherent with our previous point the prescriptive implications of a gap between what would be normatively desirable and what is ascertained through a

behavioural experiment will require a value judgement on the side of the policy-makers. On the other hand, the empirical steps would be more effective if fully informed by the analysis concerning step 1 and leading to the selection of the policy options. Furthermore, in a phased *discovery-and-selection* behavioural approach there could be a dynamic feed back between step 1 and step 2, which would also shed more light on the final prescriptive assessment to be left to the judgement of the policy makers.

Toward a better conceptualisation of nudges

The lessons we draw from our experience with designing and delivering experimental behavioural studies to test policy options selected by the European Commission is that many situations and areas of interventions are complex and go beyond the parsimonious and simple nudges that have been made popular by Thaler and Sunstein. Breaking the impulsive flow of online gamblers requires well-articulated nudges, of which default settings are just one solution among many. Convincing consumers to buy eco-friendly cars only through nudges embedded into labels is unrealistic. Constraining the packaging options of cigarettes as the last channel of marketing for tobacco industry can be done effectively using fear appeals, leading to an emotion-driven behavioural change. This requires a discussion of nudging options through an attempt at a conceptual and theoretical systematisation.

There are essentially two ways to address biases originating in System 1: de-biasing and counter-biasing (Brest, 2013; Milkman *et al.*, 2009). De-biasing would involve complex strategies to activate System 2 rationality and analytical processing. Counter-biasing instead is playing one System 1 bias against another as in the classical simple nudges proposed by Thaler and Sunstein, e.g. default option leveraging status quo bias, incentives framed as losses to leverage loss aversion, or the famous 'save more tomorrow' leveraging hyperbolic discounting.

There is more than that. For instance, this dichotomy neglects the possibility of activating System 2 by stimulating System 1 with salience and affect. Our study on tobacco labelling shows that eliciting strong emotions seems to have a clear impact on cognitive processing and on conation. Thinking along these lines led us to formulate a preliminary taxonomy capturing different combinations of modes of thought and affective responses.

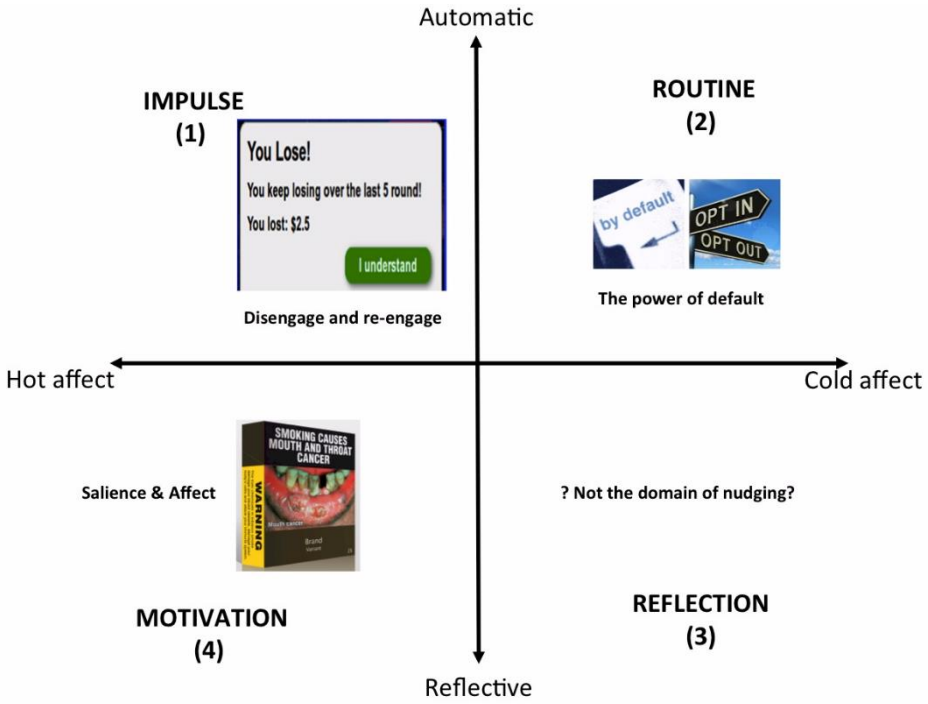

Figure 1

In Figure 1, the two dimensions identify automatic versus reflective mode (System 1 and System 2) and separately the presence or absence of hot affect. In quadrant 1 we have the typical impulsive processing and action where the mind is at the same time in automatic mode and with a hot affect. This is, for instance, the case of a player fully absorbed in his/her gambling activity. Here one can envisage nudges that disengage by stopping the human-machine interaction such as a pop-up alert to be clicked and then re-engage the player with some mental accounting to activate System 2. In quadrant 2 we have the classical situation of the counter-biasing nudges (default options). The third quadrant is that of the fully de-biasing strategies based entirely on system 2. Finally, in the fourth quadrant there is the type that concerns the strategies of hitting System 1 with strong emotions in order to activate System 2 toward the motivation to change behaviour. The picture (drawing from recent developments in cognitive sociology, e.g. DiMaggio, 2002; Samson & Voyer, 2012; Stark, 2012) could be extended with a third dimension; the distinction between nudges delivered in isolation or in social context. Advantages of such a taxonomic approach include synthesising and learning from experimental findings in different areas, and the development of a better appreciation of the characteristics of policy options that are, or are not, amenable to nudges of different types. It might also point to avenues for research seeking to establish the mechanisms lying behind behavioural change.

Experiential challenges of designing studies for policy makers

In our experience we have encountered four major challenges that we present here with a brief illustration followed by a sketch of how they could be avoided or overcome. The headings of the four subsections will be the proposed solutions.

1. Include discovery and selection phases. The kind of behavioural studies requested by the EC involved complex policy issues with little scope for simple and straightforward modification of default settings that are often the focus of 'nudges'. They required more sophisticated and elaborated de-biasing and counter-biasing designs. Such studies would benefit from a discovery and exploratory phase before the selection and testing of specific policy options. However, the commissioned studies were meant to test a set of alternative policy options that the client had framed. The conceptual and theoretical challenge we encountered was one where *selection* was pitted against *discovery*. Sometimes the proposed policy options were not informed by the extant literature and/or were not amenable to the nudge approach. Equally, tight deadlines did not allow for learning within the study in a *stop & watch* approach; the opportunity to improve and change the design as a result of experimental learning was lost. This may create frustration and strain in the client-researcher relation as the former may see this new behavioural instrument as the magic bullet for evidence-based policy-making. Our experience suggests that the design of sound behavioural research in support of policy-making should include a discovery and a selection phase. Exploration is about discovery and discoveries lead to new thinking. In both the 'selection' and 'discovery' phases of policy-oriented behavioural studies more time should be allocated to the development of a joint understanding of the 'problem' and agreement on the goals of the study.

2. Convince the policymaker that sometimes 'less is more'. The legitimate objective to obtain value for money may have unintended consequences. This is evidenced in the lengthy shopping list of policy options that researchers are invited to test. In the policy world, it may be difficult to grasp the logic of randomised control trials. As the number of options to be tested increases, the statistical power requirement in terms of sample sizes increases, as does the number of interactions. Yet on occasions, with time and budget constraints, we faced as many as ten or more treatments. Even with five options a main factor design is inevitable, omitting the detection of interaction effects that may be of policy relevance. Moreover, with many options to test and little discovery phase it is also unclear what outcomes (response variables) would be relevant to measure from a policy perspective. To the extent that it is feasible from a procurement perspective, a consultation process should involve the client and contractors to ensure that the technical specification of the study is sound and to ensure that the budget offered is maximised in relation to the scientific validity of the output. Third party external experts might facilitate this process.

3. Balance against conflicting validity pressures. In our experience with the EC, including as many countries as possible is a general requirement. While this is understandable on the ground of maximising external validity (representativeness of the sample and apparent relevance to different Member States), we have found little evidence of significant country

effects. Unless there is a strong presumption or indication from previous studies of relevant country effects, a prudent selection of countries should be the normal practice.

4. Establish a consultative client relation and involve intermediaries. Inevitably, given the novelty of the approach, there is some variation in knowledge and understanding of the logic of experimentation and insights from behavioural studies. Problems of communication and of managing expectations also emerged when the findings were presented either because of lack of familiarity with behavioural research findings or on account of unrealistic expectations from policy options that empirically showed minimal effects. Once again, we see a role for third party experts in advisory boards to act as intermediaries.

In conclusion, applied behavioural research is gathering momentum in many countries and across a range of policy domains. Maintaining the momentum would be greatly helped by efforts to develop a common language – a basis for better mutual understanding – between the worlds of research and policy making.

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Anlene: Habit Loop and Nudges Drive Brand Penetration and Frequency

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Executive summary

Anlene milk powder is positioned as an ideal bone health supplement for women over 40, as two glasses of Anlene deliver 100% of the daily calcium requirement. Sustained TV advertising fronted by a celebrity was delivering >75% ad recall and >70% key message recall but brand usage was flat and so were volumes. Further, <10% of users were drinking 2 glasses a day. *In short, the brand had a penetration as well as frequency problem.* Instead of addressing just one aspect, we cracked open the key to both penetration and frequency by using Charles Duhigg's habit formation framework of trigger-routine-reward. We fundamentally changed the trigger and the reward and tested it with 3000 families with elderly parents in China. Further we developed regular nudges in the form of daily tasks (called missions) to be done by the daughter, to keep the trigger and reward top of mind. The results of the post campaign survey confirmed that we had created a habit, and addressed both penetration and frequency.

Market background and business objectives

Anlene Brand: Anlene is the leading adult milk brand across Asia, and is mainly available in powder form. The product contains more than twice the calcium of normal milk and also Vitamin D which helps in calcium absorption. The calcium content in Anlene is highest amongst all milk powders. Anlene positions itself as the bone health expert which provides enough calcium in 2 glasses to meet the daily 900mg requirement, thus helping consumers maintain their bone health density.

Anlene in China: Anlene milk powder was launched in China in 2009 with a focus on Guangzhou and East China (Shanghai + Jiangsu province). By Sep 2011, Anlene had achieved value share leadership of Hi-Cal powder category in Shanghai as well as Guangzhou, with >30% value share, overtaking Nestlé's adult milk powder brand. Marketing support was mainly heavy TV advertising and in-store promoter girls. Messaging was focused on educating consumers on various aspects of Bone health: bone density starts declining from 30 years, 95% of Chinese women do not get enough calcium, 2 out of 3 women run the risk of osteoporosis and the fact that 2 glasses of Anlene meet 100% of daily calcium requirements. Advertising since launch had consistently featured the famous actress Michelle Yeoh.

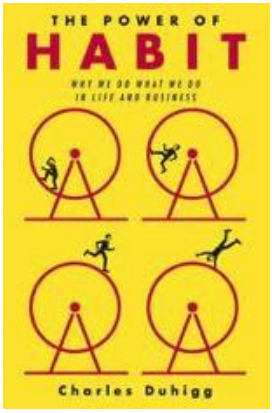
The issue: Sales growth was flattening after 3 years of strong growth. Further, the high cost of TV media in China meant the brand was still not profitable. Rapid growth with the same marketing spending was the only way to have a profitable business. There was a penetration challenge with <15% using Hi-Cal Milk powder and also a frequency

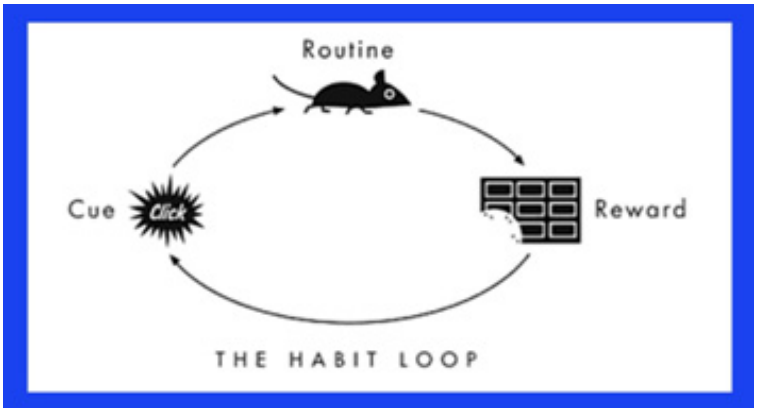
opportunity as amongst Anlene users the frequency of drinking was much less than expected, with less than <10% drinking 2 glasses a day.

Insight and strategic thinking

The strategic leap was realising that if we can make Anlene a "habit", we can address both penetration and frequency. After all, a habit means you use it and use it regularly.

Using Charles Duhigg's habit formation loop (shown below), we diagnosed what was happening currently:

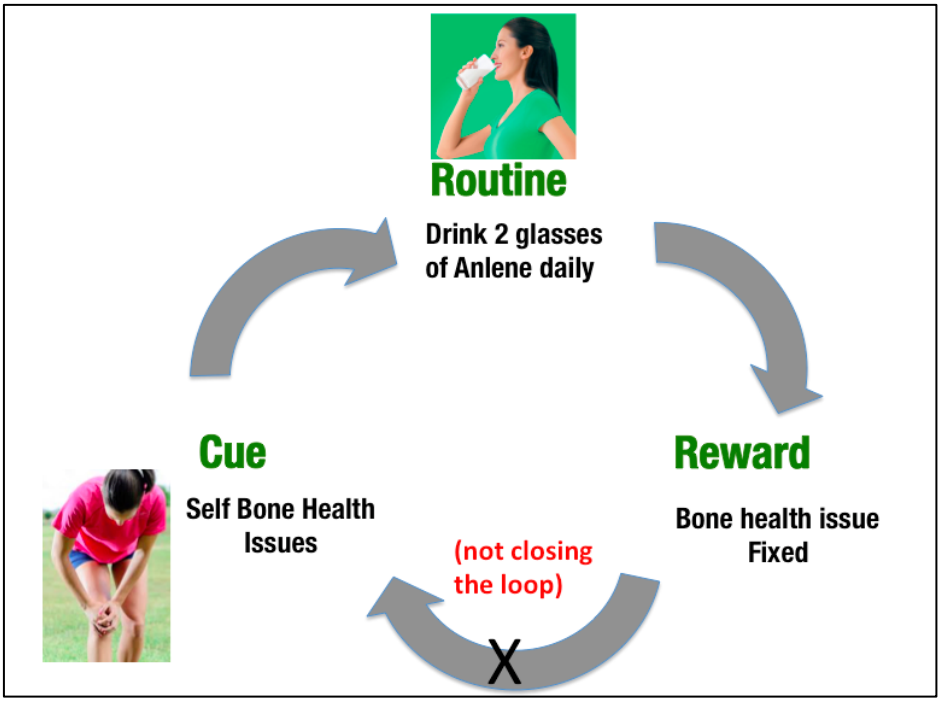




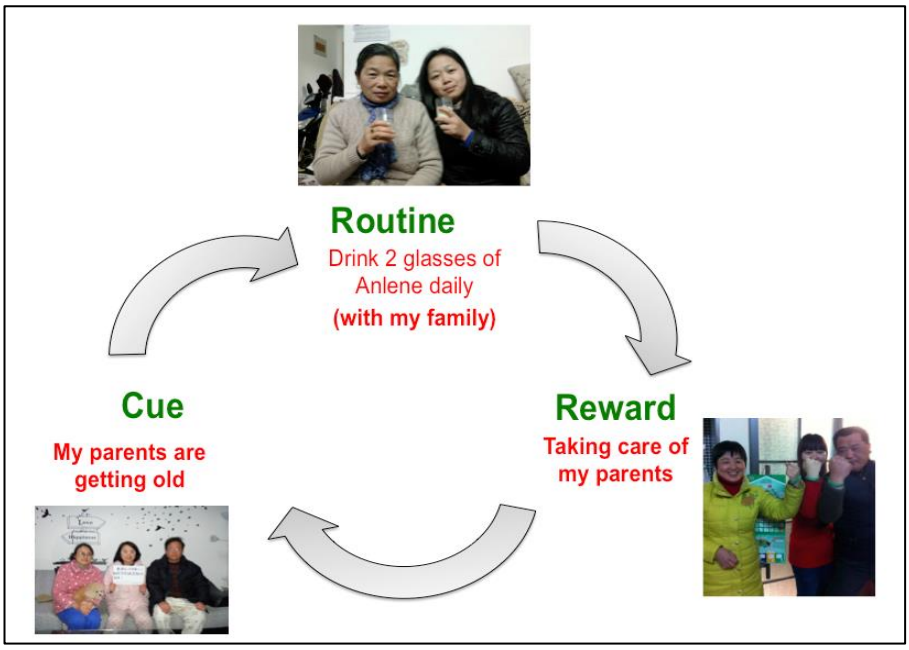
We found that:

The TRIGGER was targeted at the 40+ parent and was typically a joint niggle.

Once the niggle went away, the sustained REWARD of drinking Anlene was not visible and there was no reason to keep drinking it.



To develop a sustained habit loop, *we leveraged the local insight that taking care of their aging parents starts to become a key consideration for most Chinese in their 30s, given the single child phenomenon and poor health care system.* We also learnt that "daughters rule" when it comes to active involvement in taking care of their parents, and thus decided to target daughters. This helped us develop a stronger trigger, a better routine and a more emotional (and sustained) reward as shown below:



The contrast between the old and new habit loop is shown below:

	Current	*New*
Trigger recipient	50+ Moms	Daughters
Trigger	Joint niggle or ache	Your parents are getting old
Routine	Drink Anlene daily	Drink Anlene daily
Rewards	Rational: Niggle or ache gone	Emotional: Taking care of parents

Execution

Just sending the daughters Anlene product for their family would not have been enough to create the habit. *We learnt by studying psychology literature that:*

Habit formation requires reminders – rational as well as emotional

Helping people track and see progress motivates them to keep at the habit

By engaging/involving people around them, the chances of sticking with the habit are higher

We did two interventions to deliver the above.

A. The bone health habit kit

We sent the 3000 families the Anlene bone health habit kit which contained:

2 x 350g packs of Anlene

A habit tracking chart which had to be hung at a visible place in the home

Tracking stickers to mark their drinking of Anlene every time on the habit tracking chart

Anlene commitment bands for family members as visible reminders

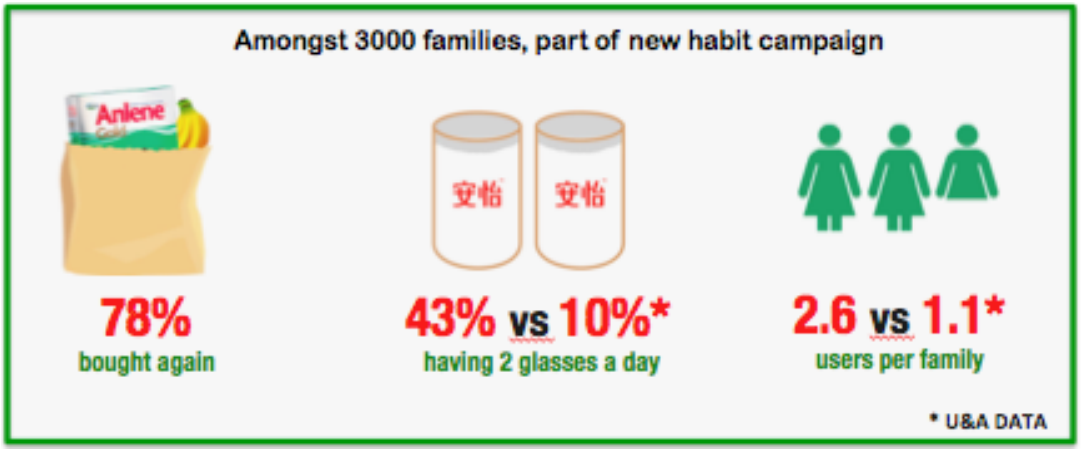
B. Daily online nudges to keep the trigger and reward top of mind

On our proprietary platform TAP (The Advocacy Platform), daughters did daily missions related to Anlene and Habit formation. They learnt new facts about bone health, calcium in diet, aging parents, building a habit and also shared their own tips on building habits. These missions acted as daily nudges reminding them about Anlene and the need to build it as a habit amongst their parents.

One of the missions was to submit pictures of their parents when they were young. The objective of this mission was to remind consumers how much their parents have aged and they need to be taken care of. The response to this submitted by some of the users is shown below.

Behaviour change results

Call back research was done amongst the families who were part of our habit building campaign. The results speak for themselves.



(n= 486)

Penetration increase was proven by % buying again. 78% of respondents said they bought Anlene again. Further we *increased the penetration within the household* by getting more family members to drink Anlene. On an average 2.6 people in a household were drinking Anlene vs 1.1 in the normal Anlene household.

Frequency increase was proven by the % of people drinking 2 glasses a day. 43% of people in our campaign claimed that they were drinking 2 glasses/ day as opposed to 10% (average amongst Anlene users)

Lessons learnt

Most marketing is about delivering behaviour change. Behaviour change and persuasion is a science which has been well studied, and clear principles exist. However most marketing practitioners, instead of applying these principles as a matter of habit (sic), continue to

spend time on the linear funnel, conscious research techniques and communication campaigns around a “creative” idea. While creativity no doubt has strong ROI, it is by no means the only way to nick a marketing problem.

Results of our Anlene campaign in China using Charles Duhigg’s habit framework and nudges via daily missions highlight that it is time we embrace marketing grounded in psychology and behavioural economics. Psychology, persuasion, behaviour change and Influence literature should be Marketing 101.

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Turning Human Understanding into Business Advantage

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Two systems, say Amos and Dan
Explain the decisions of man
The fast system drives
While the slow system skives
So we don't act according to plan

While this Guide has delved into the theory behind behavioural economics, there is no such thing as an abstract behaviour change. People either do something or they don't! So BrainJuicer's work is ultimately practical. Later in this paper we will discuss two case studies – on payment methods in retail and water consumption in pubs – where we have successfully designed and implemented behavioural interventions for clients.

But there is a higher level to commercial and corporate behaviour change that is easily overlooked. Decision makers – whether in an insights team or at a C-Suite level – have to buy into the principles behind behaviour change. Making this happen is a difficult task but a vital one. With that buy-in, behaviour change can move from the margins to the heart of a company, and transform its fortunes on more than just a project-by-project basis.

Why is the job difficult? The worlds of marketing and public policy have deep roots in classical economics. This is reflected in common 'purchase journey' models like AIDA (Awareness-Interest-Desire-Action) which places conscious awareness and interest before any emotional or subconscious engagement ("desire"). Another example might be the various models of advertising effectiveness which assume that "persuasion" should be the goal of a commercial. Even in behaviour change, the prevalent "phases of change" model puts "Knowledge" as the prerequisite for changing behaviour.

These models do not reflect thirty years of work in decision science, which has stressed human reliance on rapid, often subconscious decision making, our susceptibility to bias, and our use of simple heuristics. Most commercial models of decision making assume that Kahneman and Tversky's "System 2" plays a far more important role than it actually does.

But our knowledge of psychology should warn us that getting business and policy decision makers to move away from these models won't be easy. As Upton Sinclair once said: "It is difficult to get a man to understand something when his salary depends on him not understanding it."

So the challenge of behavioural scientists working commercially isn't just in the tactical cut-and-thrust of behaviour change work. It's also strategic. By building from behavioural principles, fearless leaders can build a world-class insights team, bring the customer into the boardroom, and transform both user experience and the bottom line.

The contents of this book represent what is known about behavioural economics. There's a second question – what do we do about it? Using behavioural science to transform organisations is the guiding principle behind BrainJuicer and the wide variety of projects we undertake. It's why our tagline is "turning human understanding into business advantage".

How do you do that, and build world-class insights and marketing teams? You need to do five things.

1. Excite

If you're a believer in behavioural economics and decision science, you have to excite your core team so they feel great about it.

At BrainJuicer we use games, stories, videos and academic examples to bring behavioural economics to life and get people feeling it. We hang it all on a simplified "behavioural model" as a framework for making the understanding easy and tangible.

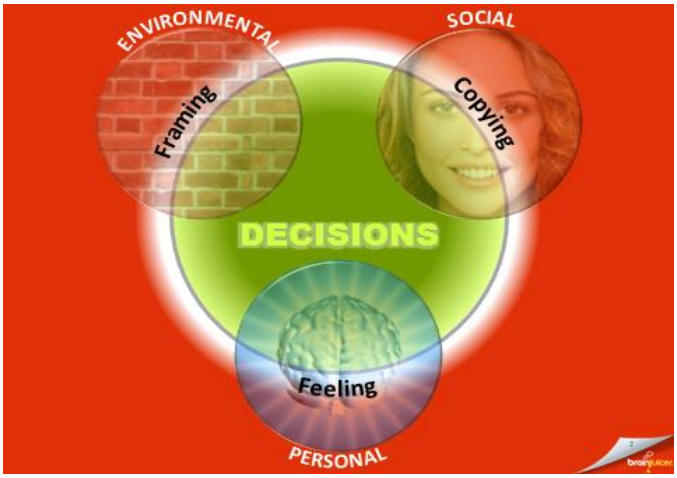

Figure 1: The BrainJuicer Behavioural Model

The model boils behavioural science down into three overlapping categories – environmental, social and personal factors on decision making. Or as we put it – framing, copying and feeling. How can you frame the decision? How do you make people copy it? And how do you make it feel right?

Simple, memorable frameworks are vital because the chances are the people you're talking to will have a bunch of embedded but wrong ideas you need to tempt them away from.

They may have a fuzzy idea of "left brain" and "right brain" thinking, which frames thinking in a way that puts equal weight on our considering, calculating side. You can introduce them to System 1 thinking and the evidence behind it. They may think in terms of atomised Likert scales and context-less choice modelling. You can introduce them to how decisions are framed and a choice environment is created. They may want to research people with the implicit assumption that we are the solitary author of our actions. You can tell them about the social element of decision making – how we are a copying animal. They may look at buying decisions using the plausible but false model of benefits, reasons to believe, and persuasion-based advertising. But these are far more important as post-rationalisations. You

can educate them on the primacy of emotions, instinct, heuristics and hot stages in influencing actual decisions.

All along, your best weapon will be the real behavioural and bottom line impact these ideas have.

2. Evangelise

So your team are passionate behavioural experts. Now you need to spread the word to the rest of the business. One way to do this is to lend your insight and marketing gurus to the rest of the organisation – short-term secondments to R&D, Sales, Finance and HR with a mission to introduce a behavioural angle to those roles and teams.

This personal touch is essential, but outreach within the business can take on more creative forms! We are social creatures who love to share, copy, and gossip – so light a lot of fires and watch the behavioural blaze spread. Offer the business a constant stream of inspiring behavioural content. Some ideas you might like to try:

- Book clubs – a great way of spreading ideas: read a behavioural book every month or two, offer nibbles, and let people argue over the ideas. It's a good way of identifying points of resistance as well as evangelising.
- Webinars – webinars let you bring behavioural expertise to a global company very effectively. They're no substitute for face to face conversation, though!
- Speaker events – bring in behavioural experts from outside the company to share their work. A lot of cutting-edge behavioural work is happening in academia, and practitioners are usually looking for ways to prove their impact – so sharing that knowledge with you can be mutually beneficial.
- Storytelling – one of the great things about behavioural science is how rich it is in fascinating examples. You're dealing with secrets and quirks of the human mind, and anyone with curiosity will be interested in those. Start a newsletter, email group or pinboard showcasing findings and nuggets – and suggesting how they might relate to the lives of your customers. It will help encourage a corporate fascination with understanding the human condition.

Market research and insights have often been a rather defensive discipline – a safety net for decisions, not a springboard. With behavioural thinking, the insight function can become not just bold, but vital to the bottom line. Your evangelism will help people notice.

3. Encourage

Alongside teaching there has to be doing. The market research and marketing teams need your encouragement to challenge the status quo and dare to act on behavioural principles. Encourage them to use their newfound knowledge of behavioural science to challenge current practices and spot opportunities for change. Here are some quick examples of how we've applied this thinking in our market research work, creating behavioural best practise alternatives to traditional thinking.

Packaging: For packaging, we test new packs and redesigns by putting a time limit on choices – most pack testing lets respondents consider the new packs for as long as they need to make a considered decision. A time limit is a better fit with real shopping conditions and with System 1 decision making. The results are more predictive of market reality – they reward simple, emotionally appealing packaging and punish confusing rebrands.

New product development: Try testing concepts that are more like mini-adverts – brief, attractive, and highly visual summaries. Most concepts for new products spell out benefits and "reasons to believe" in detail. But this assumes that people are exposed to information, attend to it and remember it – when in most cases they will judge a new idea rapidly and emotionally. Reasons to believe in a concept test can protect lame ideas with a blanket of post-rationalisation. Leaving them out will mean better discrimination and better decisions.

Figures 2 & 3: Original concept for Richard's Rainwater brand – highly detailed – and "Adcept" revised concept for the same brand – more System 1 friendly.

Advertising testing: The main advertising objective should always be "make my brand famous" with an emphasis on making people feel something strongly rather than remembering messages. Studies of the Institute For Practitioners In Advertising (IPA) database show that an emotional approach is far more likely to deliver long-term profit gains than a rational message or a commercial that blends emotional and rational elements.

We were intimately involved in the development of two of the most successful advertising campaigns of 2013, one on each side of the Atlantic: 3 Mobile Moonwalking Pony (over 7m YouTube views) and Guinness Wheelchair Basketball (over 7m YouTube views). Both adverts continue to have a tremendous impact on their respective businesses and, at time of writing, 3 Mobile have launched Singing Kitty, their 2014 follow up which has over 5.5m views.

So what are you looking for when you embrace a new research approach? The question to ask is whether it achieves a demonstrable business advantage on old thinking – like the three above do.

4. Experiment

Behaviour change is exciting because it's a culture of experimentation. When we work with companies or policy-makers to change people's behaviour, we encourage them to always have testable goals in mind. The aim is not just to understand behaviour and its levers but to

create interventions that you can test in the field, in order to find the ones that show a significant effect and which you then roll out as widely as possible.

This means embracing "the paradox of success" – that you need failure to achieve it. It's a very different attitude from most research, which focuses instead on *avoiding* failure and ends up falling back on the status quo.

Indeed, one of the most powerful proofs of the very real impact of behavioural interventions is you can make sales go down as much as up – the effects of a failed activity is not zero but a negative impact. Even this failure shows that you've identified a real lever of behaviour! By using proper control groups (and randomised trials where possible) you avoid loading the dice in favour of pet projects and create a robust organisation able to uncover and implement really effective interventions.

Case study: MasterCard, Netherlands

An example of the "paradox of success" is in our work with MasterCard and the Belgian retailer Hunkemoller. We had a defined behavioural goal: increase the proportion of spending via Maestro debit cards.

As our Behavioural Intervention, we selected branded priming – small stickers with the Maestro logo placed in particular locations in-store (on the shop window, in the changing rooms, and by the tills). We alternated between control weeks (with no stickers) and activation weeks (with stickers) across 6 weeks and in several stores, varying the activation stores to account for the effects of weather and other local conditions. The variable we were studying was the proportion of real sales accounted for by Maestro purchases.

What we found was an increasing effect on choice for a single sticker prime – the closer to the till it was placed, the more it drove choice of Maestro over other payment options. A sticker prime by the till shifted the proportion of Maestro purchases 4 percentage points higher on average.

But as well as pointing to success, the experiment also let us learn from failures. In stores where we had used multiple sticker primes – in all three locations – sales actually fell. "Nudge 'em, don't bludgeon" was the lesson we took – a negative priming effect took hold once customers began to notice the stickers.

Case study: Water consumption in pubs, UK

This piece of work was done for DrinkAware, an industry-sponsored charity aiming to encourage responsible drinking in the UK. Our behavioural goal was to increase the incidence of water consumption in pubs, as part of an overall aim to reduce binge drinking.

Figure 4: The poster we placed in bars as an activation.

UK Pubs have by law to offer free water, but this is rarely taken up. The interventions we tested involved increasing the mental and physical availability of this water. We put up a large poster showing a man putting a glass of water to his lips (based on the 'mirror neuron' hypothesis that, as social animals, seeing an action increases the likelihood of someone taking that action). We also made bottles of water freely available at the bar.

We alternated between control weeks (without the interventions) and activation weeks (including them) across a number of pubs. The measure we used was total consumption of water, which we established by combining tallies of bar orders, sales data, and the number of free water bottles taken. We also found that when the behavioural intervention was in place, the proportion of drinkers requesting or taking water rose from 3% to 11% - a success for DrinkAware and for behavioural science!

5. Establish

The final piece of building world-class insight and marketing teams is ensuring their legacy and status in the organisation by establishing proof of behavioural impact. The time, effort, skills, patience and money you invest to prove the impact of your initiatives will pay off in terms of cementing behavioural science throughout the organisation.

An example of this is the IPA Advertising Effectiveness database, which is now the world's leading repository of econometrically modelled ad effects. Not every intervention you conduct will work well – a database rewards your bravery and patience by ensuring even those that fail will be useful.

In some cases, a structured programme of experimentation will help you bring this knowledge together even faster. Our most recent work at BrainJuicer has been in bringing structured behavioural interventions to promotions testing. Price promotions account for a great deal of today's marketing budgets, and much of this money is wasted on deeper than necessary price cuts or on offers which simply lack emotional appeal.

By testing promotions based in various different heuristics – like social proof ("Most popular in this store"), trust in authority ("As recommended by…"), anchoring ("Max 8 per

customer") and more, we can create hypotheses for what works which can be quickly tested in the market. Since different things will be effective in each category and market, these tests will quickly bring structure and a powerful framework to a traditionally chaotic and reactive part of marketing.

Conclusion

The five moves you need to make to create world-class insight and marketing functions using behavioural science:

Excite your teams and create behaviour change experts.

Evangelise throughout the organisation by lighting many fires.

Encourage researchers and marketers to challenge assumptions and try new ideas.

Experiment – build a culture of experimentation that doesn't fear failures.

Establish proof and cement the change with hard evidence that behavioural science works for your business.

The Power of Rank: Behavioural Insights into Product Pricing

Henry Stott, Decision Technology

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Introduction

It's one thing to acknowledge that brands need to pick the right price for a product. It's quite another to quell the bickering that then ensues. The finance department? They have an econometrician who wants to put the prices up. The people in sales did some market research that says the opposite. What to do? We will describe here how a strategy drawn from both approaches but different to each can help to resolve such debates. We demonstrate, too, influential pricing effects that typically pass unnoticed when using traditional methods. Notably, we discuss how buyers are more ordinal than cardinal. That is to say, they care more about how price ranks against competitors, and against other reference points, than they do about the absolute price itself. An intuitive and innocuous insight? Certainly. Yet it has profound implications for how to peg prices, design websites, pitch promotions and so on.

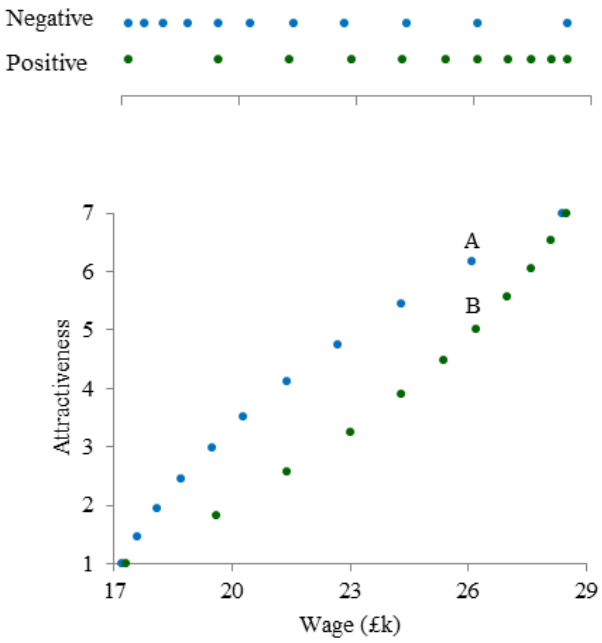

Figure 1: Salary judgements

Small compensation

Take wages. To the American satirist H. L. Mencken[1], "a wealthy man is one who earns $100 a year more than his wife's sister's husband." What you earn matters less than whether it trumps a crucial threshold.

1 From Mencken (2007 [1920]). Mencken was an American essayist referred to as the Sage of Baltimore. Some claim for a city that spawned both Philip Glass and Oprah Winfrey.

Mencken's observation that a paycheque is relative (in his example, literally), and that a salary is rarely just a salary, is borne out by previous research (Brown, Gardner, Oswald & Qian, 2008).[2] For example, when people were shown a list of 11 salaries and asked to judge the attractiveness of each wage, their verdicts reflected more than just the cold cash.

The graph in Figure 1 plots two of the alternate lists presented to the respondents. People instinctively convert the unevenly distributed range of salaries into an evenly distributed range of relative attractiveness. So rather than its being invested with an absolute value, the common £26,000 salary (labelled A and B) seems better or worse depending on whether it ranks second or fifth in the salary range, respectively. It's not just what you earn, but how you rank[3]. We are all casting at least one eye at those Joneses next door. How we fare in comparison to others can swell, or shrink, our sense of satisfaction with our own lot. It's the same quirk of human nature that led Gore Vidal to remark "It's not enough to succeed. Others must fail".

A behavioural approach

Does this phenomenon extend to product pricing? The assertion that people respond to ranks, rather than to absolute amounts, has been going strong since 1965[4] across many perceptual dimensions. We studied this question of the interplay between a product's price and rank in the context of a car insurance comparison website. Our approach recreates a facsimile of a decision environment, tests different variations across people, and then statistically analyses the resultant behaviours. Such randomised controlled trials are the scientific gold standard for measuring what influences people.

Here are your insurance quotes…

Provider	Price	Excess	Service	
PRUDENTIAL	£379	£75	★☆☆☆☆	Proceed
insurance	£396	£200	★★★★☆	Proceed
swinton	£417	£75	★★☆☆☆	Proceed
Lloyds TSB	£443	£150	★★☆☆☆	Proceed
esure	£464	£150	★★☆☆☆	Proceed
RSA echoice	£497	£75	★★★★★	Proceed
	£526	£125	★★★☆☆	Proceed
churchill	£532	£100	★☆☆☆☆	Proceed
AVIVA	£559	£250	★★☆☆☆	Proceed
RAC	£589	£150	★☆☆☆☆	Proceed

Figure 2: Product choice task

2 Brown et al. (2008) also demonstrate that well-being is sensitive to both actual salary and salary rank for 15,000 participants of the Workplace Employee Relations Survey.

3 The authors show that people are also sensitive to range (i.e. where they sit between the top and the bottom). This means that positively skewed salary distributions, where more people are nearer the top (like the blue dots), generate greater overall well-being. High earners are indeed a form of social pollution.

4 Parducci's (1965) frequency is what we're calling rank.

For the task, people chose a policy from ten rival insurance providers using the comparison website shown in Figure 2. While the set of providers was fixed, different participants saw randomly allocated prices, excesses, and verdicts for service rating[5]. We also collected personal details and brand perceptions.

Price and rank

It is hardly a shock to find that market share rises with falling prices. To find otherwise would be as unlikely as Vladimir Putin keeping his shirt on during a photoshoot. But what our experiment more crucially shows is that this response to changing prices depends additionally on the insurance quote's ranking within a range. Figure 3 shows how the market share of a given insurer changes from just over 0% to 65% as its quote migrates from £500 to £350. However, this is no smooth transition. There are substantial discontinuities as the quote migrates into third, second or first place on the comparison site, reflecting how people use rank, over and above price, to shape their purchasing choice.

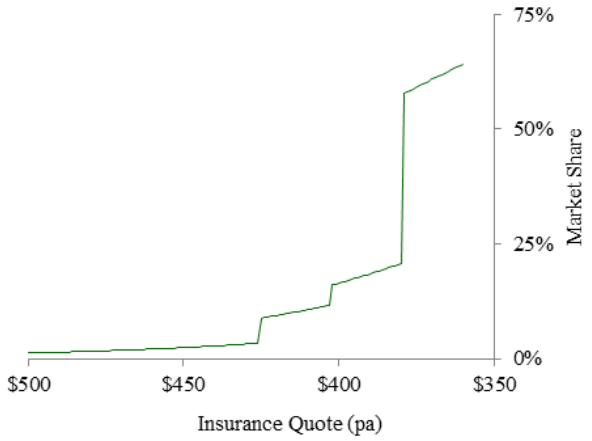

Figure 3: Product pricing

This study underlines why we advocate a behavioural approach to customer insight. Econometric modelling rarely starts out with insights into how people actually make decisions. It can therefore overlook the whims and impulses that might propel us to purchase one product over another. The result is that it misses important effects such as framing. A traditional elasticity approach would fit a smooth curve through Figure 2 and thereby completely misdiagnose the optimal pricing strategy.

Meanwhile, whilst market research seeks to understand consumers "as they are", it uses unreliable self-reported data rather than actual behaviours (ask a doctor how much they believe their patients' claimed levels of weekly exercise). Or else it is based on an unrealistic and inflexible task, as is the case with conjoint analysis, to try to divine the most valued permutation of features in a product. Neither of these approaches therefore leads to the

5 Each participant saw the same high and low prices (albeit from different providers). Other prices were drawn at random from this range. The data was fit to a choice model, including cross-terms, using variations in the experiment (i.e. price, excess, etc.) and people (i.e. demographics, personality, brand images, etc.).

kind of credible, rigorous, quantitative output needed to drive pricing strategy or mobilise an organisation.

Branded

Using a behavioural approach we can also study other experimental variables and participant characteristics. Some of these are shown in Figure 4. The figure highlights two arresting insights. First, being the current provider triples your chance of being selected. This is worth about £80 (or 20% on a £400 policy). So you can afford to put your prices up after acquiring a customer, at renewal, though there is a limit. Inertia isn't infinite.

Second, the figure is noteworthy for what is missing. UK insurance providers spend over £100mm each year on TV adverts. Yet, rather startlingly, not one brand proved itself to be any more attractive to consumers than would be accounted for by its role as the incumbent and its service rating. Similarly, no specific brand images drove product choice. The only impact was a tiny propensity for people to pick a brand that they regard as "creative". Either the brands don't credibly stand for anything, or else what they do credibly stand for doesn't influence purchasing[6]. So that resolves the famed conundrum[7] about not knowing which half of your advertising budget is wasted. Guess what? In auto insurance it's both.

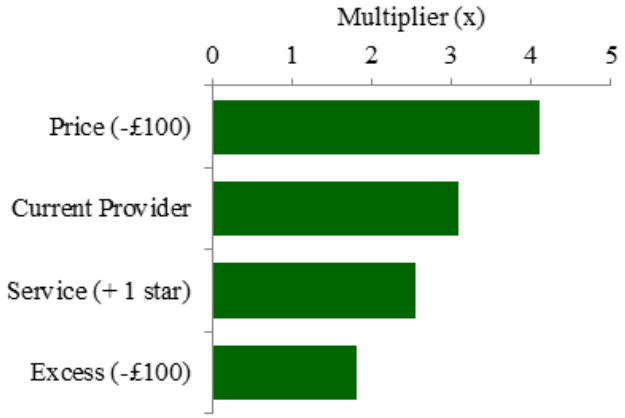

Figure 4: Market share drivers

It's worth noting that in such brand vacuums, price can become a quality signal. David Foster Wallace, in his essay 'Consider the Lobster', wrote how some New England colonies had laws against feeding lobsters to prison inmates more than once a week because it was considered cruel, "like making people eat rats". As overzealous harvesting eroded supplies and drove up prices, lobster consumption then became a wealth signifier. Today, with dockside-prices in Maine at a 30-year low and nearly a thousand Red Lobster "casual dining" restaurants worldwide, we may be witnessing this process in reverse.

6 Note that no cross-terms emerged in the analysis. All the market heterogeneity can be described by people's different starting points (i.e. price and provider) and journeys.

7 The one that goes "I know that half of my advertising budget is wasted, but I don't know which half" which some believe was coined by Lord Leverhulme, the founder of Unilever and others, typically American, attribute to John Wanamaker, the Philadelphian merchant, some thirty years earlier.

So we'd observe that higher prices can be turned into a good thing. Pricing is more chemistry than physics. We may yet live in a world where higher cost auto insurance is the mark of a reassuringly higher specification product, rather than simply an irritating rip off. We may yet live in a world where lobsters are the new kebabs.

Checking your references

We have discussed that people respond to how a price ranks against other prices. So the second part of this problem is to understand how these reference sets are constructed during a purchasing journey. This, and the impact of managing those reference sets, is another topic. But it's worth flagging that for loyal customers the reference prices are often your own. So opaque and volatile pricing can be extremely corrosive for this important segment.

Likewise, prices may simply be compared to everyday costs. Figure 5 shows the cumulative distribution of debits for a UK clearing bank's retail base[8] (see Stewart, Chater, & Brown, 2006). So 89% of transactions are less than £150, making this a "big" amount. One strategy for making it "small" is to limit the references to a subset of larger expenditures, such as annual items. For instance, £150 is a big sum compared to a pint of milk but small compared to a holiday. It's simply a matter of playing with perceptions. Those steins of German lager they hand you at Oktoberfest? They seemed huge until you saw those supersize cola servings that New York wants to ban – the ones that resemble the buckets that emergency workers use to put out forest fires.

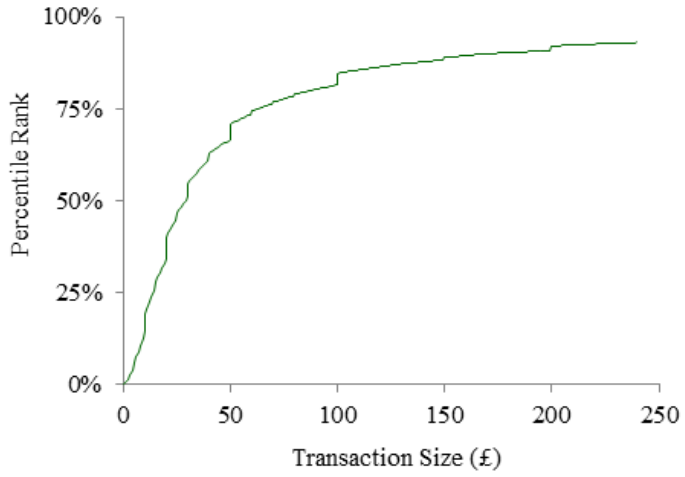

Figure 5: Current account debits

Note, too, how Figure 5 has discontinuities at the "round pounds". For example, there are a lot of £10, £20, and £50 debits. The use of everyday expenditures as reference prices is therefore one cause of the "left digit effect", the well-documented phenomenon by which shoppers' perceptions of how affordable or expensive they consider a product is shaped to a disproportionate (and irrational) degree by the leftmost digit of its price. For example,

8 See Stewart et al. (2006). The figure is missing everyday cash transactions, so the real curve will be even more bowed. The paper proceeds to develop a well-regarded theory about the psychological foundations of utility.

cutting a £10 price to £9.99 yields a drop in rank on Figure 5 from 19th to 13th percentile whereas going from £10.01 to £10 achieves no such shift[9].

Summary

The research shows very clearly that brands need to fundamentally re-think their approach to pricing:

References: Insight teams need to understand where customers are going for price information and what references they bring to a decision.

Touchpoints: Sales teams need to review how they can influence that process by changing web design, renewal letters, call centre scripts, and so forth.

Pricing: Pricing teams need to overhaul their modelling to address the fundamental non-linearity and instability of customer price elasticity.

The behavioural approach we've described represents an important tool for addressing this last issue because it plugs a gap. It offers a facsimile of the decision environment so companies can explore the impact of changing prices, promotions, bundling, product design, brand, sales process and so forth. Moreover, it's cheaper, quicker and more diagnostic than field testing or sales modelling, enabling companies to pre-test a wider range of alternatives on a tighter development cycle. It offers, too, a safe environment in which to study and refine higher risk strategies, ring-fenced away from the brand. Finally, it may well be the only way to get sales and finance into the same room without all that unpleasantness.

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9 For a review of the left digit effect and prices ending "9" see Monroe (2003).

Brands as Frames

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In marketing our goals are, ultimately, about behaviour change, but what is it about brands that drives choice and preference? Brand owners have always known that brands have some sort of intangible quality over and above the pure functionality of whatever product or service they grace. This is what we've called brand 'equity' but it's always been difficult to pin down, explain and make tangible. Consumers are willing to pay £2-3 for a coffee in Starbucks yet they know, objectively, that for the price of two cups they could buy a whole jar of coffee in a supermarket. So they must be buying something else. Some sort of value applies over and above the physical product, but what is it? How can we understand it, measure it and harness it for greater commercial impact?

A cosmetics company wanted to develop a new skin cream, so they ran consumer tests in several cities with different, unbranded, formulas. In one city, one of the creams scored much better than in the other cities. However, all the other creams tested in that particular city did not show the city to be a factor. Later investigation revealed the cause of the effect: in that specific city a different jar was used because the standard jar was not available. The replacement jar, however, differed in shape. This seemingly trivial difference significantly altered consumers' evaluation of the cream! The jar framed how the cream and its performance were perceived. The reason for this is that the autopilot (Kahneman's System 1) in our head processes even the most subtle signals (such as the shape of a jar) – and this in turn can colour the overall product experience.

Every perceivable signal can frame our decisions. In an experiment on scent (Ackermann, Nocera & Bargh, 2010), people entering a shopping mall were exposed to different kinds of scents, such as baking cookies or roasting coffee beans. On their way through the mall they encountered someone who, unbeknown to them, was involved in the experiment. This person pretended that they needed some help, for example in picking up items they'd dropped. People who had been exposed to the scents were more likely to help than those who hadn't. The test subjects were not specifically aware of the scent when they entered the mall, but this signal influenced their behaviour.

At work we tend to generate different ideas than we would if we were in different surroundings e.g. on a terrace overlooking the ocean - spatial conditions also work on us in the background. In workshops, merely changing places with someone can help us come up with new ideas. The background indirectly affects everything that we do without us being aware of it.

What is the principle that underlies these effects? The following image shows a key illustration from Kahneman's Nobel Prize speech (Kahneman, 2002). This is not about the illusion of perception itself, however, but about what may be the most basic principle in our brain. The image shows what scientists call the 'framing' effect. Framing is a key concept in

understanding how decisions are made. Understanding this principle leads to a comprehension of how the autopilot (System 1) and pilot (System 2) come up with an integrated purchase decision together.

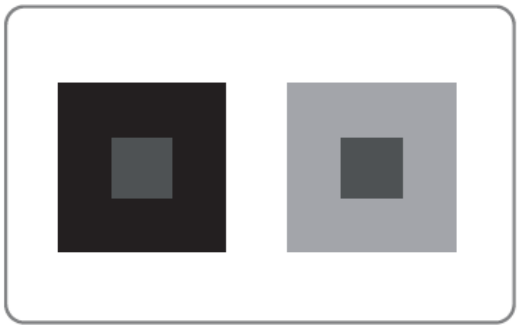

Figure 1: Framing – The background changes the perception of the grey square in the foreground.

If we look at the two small squares in the centre, it seems as if they are lying in front of the larger ones. The small squares are in the so-called foreground; they are what scientists call the figure. The large squares form the so-called background, they frame the little squares. The two grey squares in the centre appear to be different shades of grey colour, but they're not. Objectively, they're identical, but subjectively there is a clear difference. The perception of different shades of colour is created only by the background frames. This means that the background 'radiates' onto the figure and changes its appearance. The jar was the background influencing the perception of the cream. Consumers, of course, focussed on the cream because this is what they wanted to evaluate, but the background framed their perception of the cream. The scent of coffee framed the perception of the experience in the mall and thereby influenced behaviour. This framing happens implicitly. We are not aware of the influence, we do not even notice this effect and even now that we know that the two little squares are identical, we cannot help but see them as different. The impact of the background and how this works remains intangible. The background indirectly, and implicitly, changes our perception and, hence, changes our decisions. This is how the autopilot and pilot work together. They are intertwined. The autopilot provides the frame and the pilot focuses on the figure. Together they create how we experience the world and build the basis for our decision making.

This framing effect is crucial for marketing. With the model we currently use in marketing the impact of the jar on the product experience is hard to explain. The same applies to brands. Framing explains how brands influence purchase decisions: Brands operate as the background framing the perception and, with it, the experience of the product. We know a lot about what people explicitly want from a shampoo, a bank or a car (the small grey square). What is more difficult to grasp is the interplay between the brand working as a background and the product on which the consumer focuses. Framing explains the real equity of brands. We know this from blind tests: branded products appear superior to unbranded although, objectively, the product is identical. This framing effect of brands is not marketing hype; it increases the perceived value and the willingness to pay a premium price – even for objectively identical products. The VW Sharan, Seat Alhambra and the Ford Galaxy

are identical cars – produced in the same factories – but consumers have been willing to spend a premium of 2,000 euros for the frame that the VW brand added. In the UK, the Virgin Mobile telecoms brand has higher perceived network quality and satisfaction scores than T-Mobile despite the fact that it uses the exact same network!

Kahneman's model (Kahneman, 2002) illustrates that the first module in the autopilot is perception through our five senses. Perception is the key interface to our marketing activities, be it the smell of our face cream, the size or colour of our packaging or the music we use in our TV ads. The prerequisite for all of this to have an impact is that it gets inside consumer's minds, and perception is the door through which our products and brands have to enter. Perception largely operates at an implicit level: we have no clue exactly how we are able to recognise a red traffic light within a fraction of a second, nor which processes in our brain are responsible for this. Perception is an active process in the autopilot, as the framing effect shows: the colour of the little squares is objectively identical but our brain makes them appear different.

How we actively create, rather than passively perceive, the world around us is illustrated by the following experiment (Hoegg & Alba, 2007). Consumers were given a vanilla pudding that had been made to look brown by using tasteless food colouring, so that it closely resembled a chocolate pudding visually. The consumers were asked to taste it and describe how it tasted and most of them described the taste of chocolate! They all subjectively experienced what they implicitly expected, misled by the appearance of the pudding. Subjects in a related study (Dawkins, Fatima-Zahra, Ahmed & Edmonds, 2011) who believed they had been given standard coffee, showed an increased pulse and heart rate even if they had, in fact, been given decaffeinated coffee. This explains the difference in performance experienced by consumers when using their preferred brand as opposed to an unbranded equivalent, even though the two basic products might be exactly the same – the brand frame activates expectations, and these, in turn, influence the subjective, perceived product experience without us being aware of this influence.

The pudding experiment shows that expectations are part of the autopilot. We expect a brown pudding to taste like chocolate and this expectation modulates, in the background, the subjective taste experience. Brands work just like placebos. Just how strong these placebo or expectation-based effects can be is shown by a study (Moerman, 2009) where participants were told that they would be testing a new medicine for headaches. Some of the participants received real Aspirin tablets, the others were – unknowingly - given placebos. The placebo group received tablets with no active ingredient but in original Aspirin packaging. They believed, therefore, that they were taking real Aspirin. The result: Simply because of the packaging the placebo tablets reduced headaches significantly – not only reported pain relief but actual physiological reactions. The packaging with the Aspirin logo on it activated expectations of pain relief which, in turn, changed neural activity patterns as if real Aspirin were consumed. What this ultimately shows is how strongly expectations affect physical reactions in humans.

These expectation-based mechanisms are based on principles which are highly relevant to marketing. One study (McClure, Li, Tomlin, Cypert, Montague & Montague, 2004) showed

that the physiological effect of an energy drink reduced significantly when it was introduced at a discounted price – expectations of the drink's performance were lowered when the product was perceived as cheaper and this led to reduced effectiveness. This also works in the opposite direction – seeing advertising about the effectiveness of the energy drink heightened its physiological impact even though, objectively, there was no active ingredient - the product tested was just a placebo energy drink. Branding, pricing and other marketing activities that can create an expectation about how good an experience should be, bias not only the perception of the consumption experience but also the processes in the brain with which this is correlated. For marketing management this implies that a certain level of product quality is important to ensure satisfied customers but beyond that the expectation that a brand is able to trigger, via its frame, might be equally important.

Price as a frame

For consumers price is a guiding signal to evaluate product quality because they have learned – whether it is objectively true or not – that "quality has its price". But the impact of price as a quality signal is more powerful than merely to raise explicit expectations. German neuroeconomist Hilke Plassmann ran an experiment (Plassmann, O'Doherty, Shiv & Rangel, 2008) that looked at the impact of price on the 'real' product experience, i.e. on the physiological response in the brain when consuming differently priced products. Participants were drinking wine while lying in a brain scanner. They were told the price of each wine they tried. What they did not know was that, sometimes during the test, they were given the identical wine twice, once with a high price tag ($80), once with a low price tag ($10). Her research showed that participants rated the higher-priced wine as tasting significantly better, and that this coincided with a marked increase of activity in the brain's reward centre.

Language as a frame

Language is an important vehicle in our everyday marketing work that we use to convey our messages. So what can we learn from science regarding the impact of language on perceived value? In a study (Wansink, van Ittersum & Painter, 2005) by Brian Wansink of Cornell University, menus were either presented with descriptive labels such as 'Traditional Cajun Red Beans with Rice', 'Succulent Italian Seafood Filet' and 'Tender Grilled Chicken' or with labels with just the name on it (e.g. red beans with rice). The question was whether such flowery modifiers would have any impact on the perceived taste (i.e. value) of the food. The result was that the descriptive labels not only resulted in more orders but also led participants to rate those foods as tasting better than the identical foods given only a generic name.

Value-oriented language not only can add perceived value, it can influence the perceived product performance as well. In a test (Wansink et al., 2005) of messaging on meat packaging, the signal '75% lean' was valued significantly more positively than the message '25% fat'. Interestingly, this higher value persisted when the meat was consumed, meaning that the description not only influences the purchase decision but also the subjective experience of the product. This impact of language can also be seen on a neuronal level, in particular in the brain region responsible for the valuation of reward: the orbitofrontal

cortex. In one study (de Araujo, Rolls, Velazco, Margot & Cayeux, 2005) the medial orbitofrontal cortex was more strongly activated when a flavour stimulus was labeled 'rich and delicious flavour' than when it was labeled 'boiled vegetable water'. In another study, different labels describing a test odour significantly influenced the subjective ratings of how pleasant the test odour was, and the variations in ratings were correlated with the activations in the orbitofrontal cortex. Neuroscientist Edmund T. Rolls summarizes these findings as follows:

> *"Part of the interest and importance of this finding is that it shows that cognitive influences, originating here purely at the word-level, can reach down and modulate activations in the first stage of cortical processing that represents the value of sensory stimuli". (*de Araujo, Rolls, Velazco, Margot & Cayeux, 2005, p. 12)

How marketers can use frames

The perspective of 'brands as frames' can help to end the typical dualistic debate between Marketing and Sales departments, where Sales want to focus on the product whilst Marketing and agencies want to put the focus on a brand's 'image'. This dualism often translates into a discussion (or argument) as to how much product should be shown in an ad (features, facts, text) and how much time and space should be allocated to the brand (images, stories, emotions). When creating communication, we often think of brand and product as antagonists: it is brand OR product, sales OR image, functional OR emotional benefit. This dualism originates in the outdated 'emotional vs. rational' model of decision making which have been used to conceptualise the roles of brand (emotional) and product (rational) in purchase decisions. Framing helps us to realise that brand and product are not antagonists. They are intertwined: brands provide the background which increases the perceived value of the product. If you remove the grey square at the centre (the product) then you have nothing of value at all. The substance is lacking. Conversely, if you remove the frame (the brand): there is only the product left and we all know that, particularly in mature markets, quality at the product level hardly offers a perceivable and big enough difference between competing products, and a relevant differentiation at the pure product level is increasingly hard to provide.

The idea that there is something more to how brands and products are experienced and perceived than purely their objective qualities is not new in itself. However, until now, it was hard to capture and define precisely what is meant by this branded effect. The core benefit of modern decision science is to provide an analytical, systematic access to the autopilot system and, hence, to the implicit level of purchase decision making and its intertwining with the explicit level.

The pilot system, which we probe through explicit questions, has only limited access to these implicit drivers of purchase decisions. When asked in surveys, customers provide information in great detail about why they choose this shampoo or that service. They are not wrong, but they only tell us about the explicit part of the decision making. In the face cream study the customers talked about the performance of the cream and the price – and this is not wrong – but this introspection is just not the complete picture and it underestimates the brand effect. The influence of the frame that the autopilot system provides remains implicit.

However, in the last twenty years, science has gained a huge amount of knowledge about the architecture and functionality of the implicit system. This new understanding of the implicit level of decision making is based on robust and accurate measurement techniques able to measure implicit processes with sufficient objectivity and precision. Such techniques include priming paradigms from psychology. Using such a method we were able to measure the perceived value of a telecoms brand both with and without the brand frame and, as Figure 2 shows, demonstrate that the frame itself adds huge value (purchase intent was 390% higher when the brand was added to a product only proposition). We were also able to access and measure the implicit drivers of brand purchase and loyalty – in other words, the value of the framing effect (brand equity) can be defined and quantified.

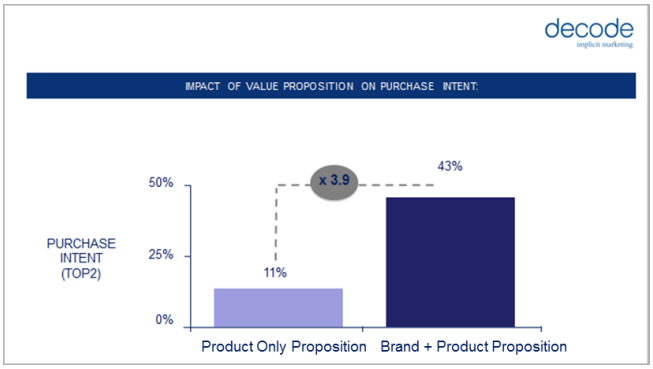

Figure 2: The brand frame increases purchase intent by 390%.

What this means to us as marketers

Brands are frames: they implicitly influence the perceived value of products and product experience through framing.

The power of the autopilot provides us with a new and exciting opportunity to influence behaviour. Potentially all the signals that we send can increase the persuasiveness of our marketing activities.

To fully understand consumer decision making, and to persuade consumers to buy our products or services, we need to take both the explicit and the implicit levels of decisions into account.

While we always knew that there were more than just explicit drivers behind our decisions, it was always hard to identify and manage this more implicit level. We now have a systematic and analytical approach to access, measure and manage the implicit level of purchase decisions.

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The Behavioral Change Matrix – A Tool for Evidence-Based Policy Making

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Carefully designed public interventions can reshape communities by encouraging people to behave in ways that are beneficial for the society or the organization they belong to. The ultimate effectiveness of such interventions relies on thorough understanding of the forces that shape behaviors. A multitude of measures can be used to change people's behavior: monetary incentives, fines, legal punishment, educational measures, and the recently popularized "nudges" serve as examples. While all of these measures (and more) can be effective, their relative effectiveness strongly depends on specific contexts, social norms, and individual characteristics of the targeted population. Drawing on the newest research in behavioral economics, the *BEA™ Behavioral Change Matrix*[10] is a powerful tool for analyzing policy issues and determining the best solutions to the problem at hand.

Two deciding drivers of behavioral change

Empirical research has shown that contributions to the public good depend on two conditions: *awareness* of a social norm to contribute and the consequences of not following the norm, and the *willingness* to contribute to and thereby follow said norm. These two deciding factors are explained in-depth next.

Awareness

Awareness, or knowledge of the effects one's behavior has on other people, can have a major impact on one's decisions, but empirical evidence indicates that people often have little or no knowledge of how their behavior influences other people and society, whether in positive or negative ways. Until quite recently for example, many smokers severely underestimated the damage they cause to the health of people near them. In addition, it is often not understood that one's behavior also affects the behavior of other people. Individuals might not realize, for instance, that by littering in a park, they encourage other people to follow their example, or that by not paying taxes they further discourage others from paying theirs.

Even if people are generally aware of the negative consequences of their behavior, they do not always take this awareness into account. A car driver might know that speeding endangers both him and the people around him in traffic for instance, but fail to act accordingly when he is late for an important meeting with a prospective employer. Most people might be aware that protection is vital in spontaneous sexual encounters, but forget this knowledge in the heat of the moment. These mismatches of general awareness and

[10] The BEA™ Behavioral Change Matrix was developed by Prof. Ernst Fehr of University of Zurich and Gerhard Fehr. It is open for public use under the condition that it is cited as "Behavioral Change Matrix by FehrAdvice."

situational remembrance have been labeled *"blind spots"* by Bazerman (2011). The cause for these blind spots can be traced back to the mind's two modes of thinking: the intuitive, fast, and impulsive System 1 and the slow, rational, and deliberate System 2, as defined by Nobel Prize winner Daniel Kahneman (2011). People evaluate actions and their consequences thoroughly only when they are in the System 2, the *"cold state"* – something that doesn't happen very often. In most situations, people are in their System 1 or "hot state", in which they rely on simple heuristics and emotions and in which they are prone to forgetting important facts.

Willingness to contribute

Awareness alone is not sufficient to motivate behavior. Even after the health hazards of second-hand smoking had been demonstrated in a multitude of studies, many smokers nevertheless stuck to their public smoking habits, demonstrating an unwillingness to change their behavior. In addition to awareness of the negative consequences of one's behavior, one must be willing to change this behavior accordingly. Willingness, an intention and ability to contribute to societal or organizational goals, is influenced by five main factors: Social norms, burdens, fairness perceptions, economic costs and behavioral preferences.

Social norms and the costs of not following them

Beliefs shared by a group or society inform *social norms*, expectations of how the majority of a group would behave in a given situation. Social norm expectation is central to the topic of willingness, as research has shown that people's willingness to contribute is dependent on their belief of how relevant a certain norm is for other people (Krupka & Weber, 2013). The more we think other people behave norm-compliantly, the more we are willing to comply ourselves. The inverse is also true. If, for example, we expect many people to dodge paying a parking fee, we feel much less motivated to pay the fees ourselves than we would if we expected most others to pay. The more people rely on the intuitive System 1 to make decisions, the more they tend to comply with what they believe to be the social norm. Norm-compliance can be increased by a large degree if the possibility to punish those who continue to be non-compliant through *"peer punishment"* exists (Fehr & Gächter, 2002).

This tendency to comply with social norms can help explain why issues such as littering are bigger problems in some contexts than others. In situations where littering is perceived as normal (at a music festival for instance), people are more likely to litter than they otherwise would be because they feel little or none of the otherwise-present anti-littering social pressure. It is important to note that the same person might show very different behavior and follow different social norms depending on the situation they are in. Reigning social norms differ strongly when a teenager is with his friends than when he visits his grandparents, for example (see also: Akerlof & Kranton, 2000).

Burdens and fairness perceptions: Psychological costs

The more burdensome an action is perceived to be, the less people are willing to partake in it. If donating money to a charity includes filling in an annoyingly long form, the form acts to discourage donations. The efforts involved in completing a task are not the only relevant psychological costs, however. Fehr and Schmidt (1999) showed the importance of perceived

fairness on behavior. When people feel treated unfairly, they are much more likely to show non-norm-compliant behavior. Fees charged on packaging, meant to reduce litter, can be perceived by consumers as unfair, and serve to spur (not discourage) a littering tendency.

Economic costs

Economic costs are monetary incentives or punishments for a certain behavior. While they have the power to strongly motivate behavior, research indicates that economic costs are only properly taken into account when people are in the slow and thorough thinking mode of System 2. Due to the fact that many decisions are made in the fast System 1, where people rely more on past experience, habits and norms than a rational analysis of costs, economic costs do not always result in the expected changes in behavior.

BEA™ Preferences

The BEA™ Preferences explain why and how individual people weigh and integrate the abovementioned social, psychological and economic costs in different ways. The BEA™ Preferences include the classic economic preferences for time, patience and risk. Social preferences for positive and negative reciprocity, trust, and altruism are added to the model to form a comprehensive picture of individual behavioral characteristics. While people develop a foundation of these preferences in their early stages of childhood, BEA™ preferences have shown to differ and be manipulable within various different situations and contexts.

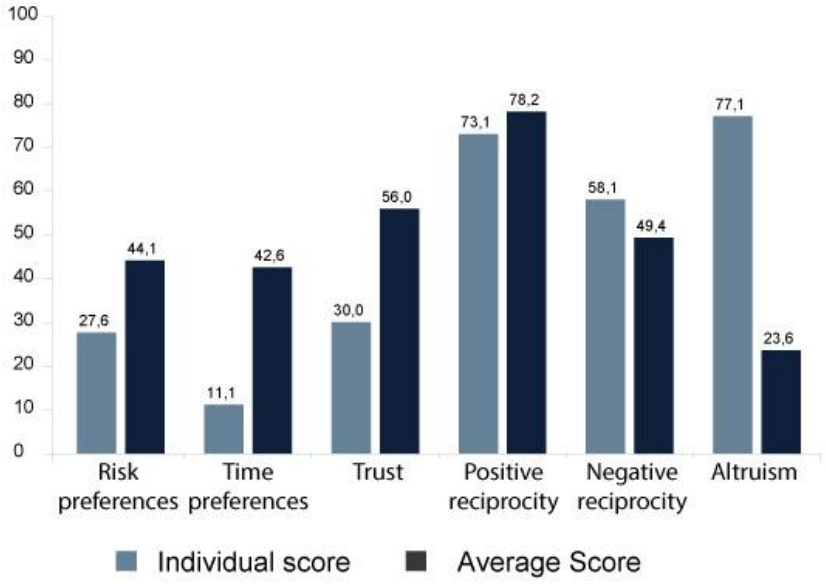

Figure 1: An example comparison between an individual's BEA™ Preferences and those of a population

BEA™ Behavioral Change Matrix

The BEA™ Behavioral Change Matrix developed by FehrAdvice & Partners AG integrates the research insights summarized above in a clear framework (see Figure 2). Taking both awareness and willingness into account, it allows for the identification of measures most

likely effective to achieving behavioral change, while also predicting the amount of time necessary to achieve the change goal.

A variety of high-level measures can be used to bring about behavioral changes. The following six approaches are typical measures to strengthen the dimensions of awareness and willingness. Their suitability in individual cases is dependent on the issue at hand and the location it is placed in the matrix. This will be discussed in more detail below.

Communication and education: Strengthens **awareness** of the issue and its negative effects on society.

Negative incentives and control: Increases **willingness** to show the desired behavior by sanctioning its undesired counterpart.

Positive incentives and enabler: Enables and increases **willingness** to show the desired behavior by rewarding it.

Belief Management: Promotes the forming of a desired norm and thereby increases **willingness**.

Preference Management: Influences the building of preferences to positively affect both **awareness** and **willingness**.

Attention Shifting: Aims to steer behavior in the desired direction - often subliminally - and so influence **willingness**.

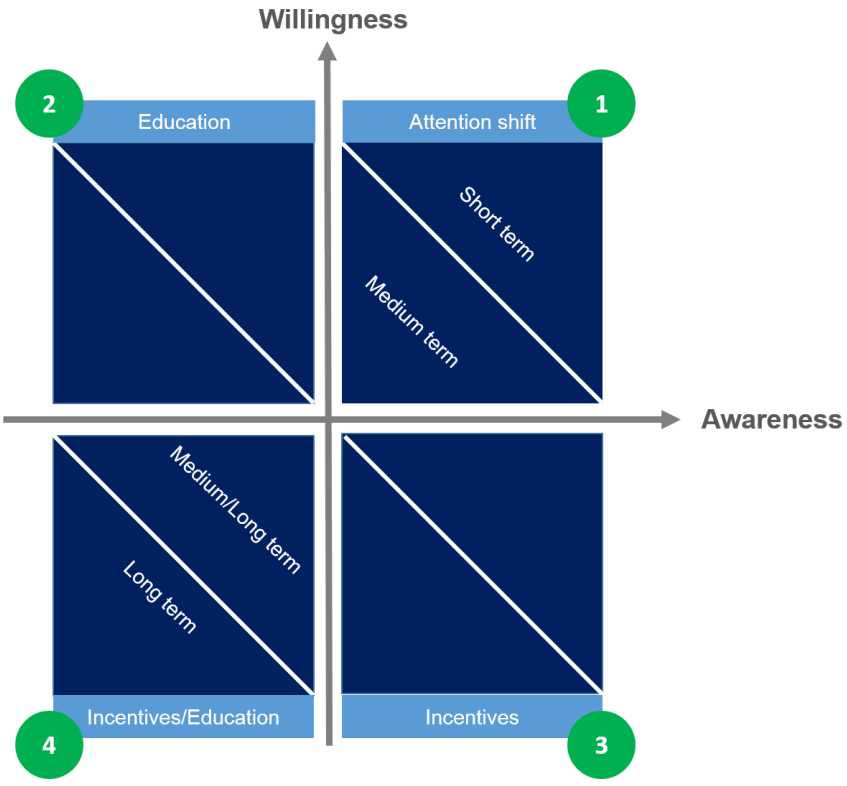

Figure 2: BEA™ Behavioral Change Matrix

*Quadrant 1: **Shift attention** when both awareness and willingness are high*

The first quadrant describes contexts in which people are aware of the consequences of their behavior as well as willing to act responsibly. A lack of norm-compliant behavior in spite of these attitudes is likely to stem from a temporary lack of awareness in certain contexts and situations. The main measure to address issues in this quadrant is *"attention shifting"*, pushing people in a certain direction in the decision moment. Short term nudges include drawing footsteps that lead to trash bins, whereas measures like commitment devices encourage long term adherence to behaviors, especially those that individuals have shown likely to defect from. "*Nudges*" do not transform people; rather they provide cues to affect behavioral change given certain circumstances. They are low cost, generally easy to apply and can achieve results in a short time.

*Quadrant 2: **Educate and communicate** when willingness is high but awareness is* low

In comparison to Quadrant 1, situations that fit into Quadrant 2 exist not because of unwillingness, but because of unawareness of actions' negative consequences. Therefore, problems can best be solved by improving individuals' awareness of actions' consequences. Educational measures and improved communication to increase awareness are therefore the tools of choice. A typical example is the aforementioned education of people on the dangers of second-hand smoking. Depending on the nature of the topic, results for interventions in Quadrant 2 can be expected in the medium or long term.

*Quadrant 3: **Use incentives and punishment** when awareness is high but willingness is low*

In contexts of the third quadrant, people show high awareness of the problem, but are unwilling to change their behavior accordingly. Incentives (positive or negative) and belief management are best implemented to resolve these issues. Examples include offering amnesty for tax violators, or a zero tolerance policy against littering (e.g. in Singapore).

*Quadrant 4: **Educate and create incentives** when both awareness and willingness are low*

The fourth quadrant consists of contexts in which people are neither aware of the consequences of their actions nor willing to modify their behavior. As this necessitates increasing both awareness and willingness, the desired behavioral changes are only achievable in the medium to long term utilizing the full BEA™ Behavioral Change Toolbox.

Case Studies

A civic responsibility project in the Middle East

In 2011, FehrAdvice & Partners AG and the University of Zurich used the BEA™ Behavioral Change Matrix to analyze civic responsibility topics and formulate recommendations for policy interventions in a small Middle Eastern country. A multitude of civic responsibility issues, e.g. "Low adherence of traffic rules", and "Queue Jumping" were identified and positioned in the BEA™ Behavioral Change Matrix using an experimental assessment. Policy recommendations were formulated on the basis of the abovementioned framework. "Queue Jumping" was identified to be a Quadrant 2 issue: people were willing to comply but not sufficiently aware of the consequences of their behavior. A communication campaign

highlighting how other people are harmed by queue-jumpers was recommended. In contrast, "Low adherence to traffic rules" was positioned in Quadrant 3, as people expressed that they were unwilling to comply with traffic rules despite being highly aware of the dangers involved in such breaking. Fortifying the punishment system by accelerating the fine-paying process and closing administrative loopholes to avoid paying the fines were identified as the most effective measures to combat the problem.

A study on littering in Switzerland

In a large online experimental study with more than 15,000 participants in 2013, FehrAdvice & Partners AG used the BEA™ Behavioral Change Matrix to analyze littering behavior in Switzerland. Although the results showed a strong general social norm to not litter in Switzerland, the study uncovered significant differences depending on context, age groups and litter object. For example, whereas "littering of a bottle" was located in Quadrant 1 and can be easily addressed via attention shifting, "littering of cigarettes" activates a much smaller willingness to avoid littering. This difference becomes even more accentuated when taking age into account: young people's awareness and willingness to dispose of cigarette butts in an ashtray rather than on the ground is much lower than that of their older counterparts. The conclusion that littering is a problem of youth, however, would be incorrect. Young people might not consider littering when they are in the vicinity of their parents. Only In the context of an evening gathering with friends in the park, however, where littering suddenly becomes the social norm, their behavior has a strong tendency to change for the worse. Based on the study's results, it is clear that to be effective, policy measures must address the specific contexts in which littering is happening and that an all for one approach cannot bring about the desired results. On the contrary, implementing new general punishment measures like littering taxes could further aggravate the existing problem by undermining the strong social norm against littering that is already in place.

A methodology for compliance management

The BEA™ Behavioral Change Matrix is not only useful in the context of public intervention but also in a business context, most notably in the topic of employee compliance. Awareness of company norms and the consequences of following or violating them on the one hand, and the willingness to comply on the other hand, are of vital importance to understanding employee compliance. The BEA™ Behavioral Change Matrix enables a company to assess differences in compliance with a variety of norms between departments, teams, and hierarchy levels to formulate tailored measures.

The authors

Gerhard Fehr is co-founder, CEO and Managing Partner of FehrAdvice & Partners AG. He developed the BEA™ Behavioral Change Matrix and has applied it in a variety of contexts, e.g. to increase cooperation between nurses and to guide change management processes in organizations.

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How Behavioural Economics Can Make People Happy

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Imagine it's the year 1500 and you're looking up at the moon, the stars and the planets. If you're careful, you can see them move – from hour to hour and especially over a series of nights. But there's no real pattern. You can recognise a light that you call Jupiter, and see that it moves in a certain direction, occasionally doubling back on itself. Then you see Mars, which moves more quickly than Jupiter, but sometimes it's brighter and sometimes fainter. And the moon, which moves fastest of all, but grows and shrinks during the month.

You could carefully catalogue all these different behaviours and make a list. If you keep enough records, you'd make a list of dozens of bright points in the sky, each with its own rules of movement. Perhaps, like the ancient Greeks, you'd think they were magical beings; perhaps you'd be more sceptical and believe there must be a natural explanation. Either way, you would have no way of predicting where the next planet could be found, forecasting eclipses, or explaining why they move in those directions. You certainly wouldn't be able to work out how far away they were or think about how to travel there.

What's missing? The laws of gravity and motion. With no unifying framework, every separate planet is a law unto itself; learning about one tells you nothing about the others. Once you have Newton's laws, you realise that every movement is part of the same great pattern; the planets are no longer a diverse collection of uncoordinated entities, but a system. You can understand the solar system, use it to navigate, and – eventually – travel around it.

Behavioural economics has been waiting for those laws. Today, we know of a hundred different psychological effects and biases. We know how many of them work – individually. We can use them one by one. But we don't yet understand what links them together; the common laws that give rise to all of the effects, from anchoring to availability bias to hyperbolic discounting.

That is starting to change. The study of behavioural economics is moving beyond this ad hoc collection of biases and random list of heuristics. Various authors (e.g. Gabaix, 2011) have proposed a more structured approach: to build a theory of human decision making and explain why specific biases occur in certain situations, and how we use particular heuristics to work around the brain's limitations in processing information.

Mirroring the progress of astronomy and chemistry in their day, behavioural economics and psychology are moving past the study of individual elements and planets, to the development of a periodic table or a system of planetary motion (Newton, 1687) – and soon, perhaps, to the discovery of the fundamental laws of physics that explain it all.

In this article we outline one of these theories – the information processing constraints framework (Caldwell, 2014).

This theory starts from three observations about the human mind:

- that we have goals and pursue them
- that the brain has limits on its ability
- that we can learn

From these assumptions – all of which seem reasonable and easy to observe in the world around us – we can build a meaningful and powerful theory. Unlike traditional economic decision theory, which relies on at least 20 different assumptions, we only need this small number of facts, plus some logical conclusions, to explain most known behavioural economics phenomena.

Take the goals assumption. If we have goals, our decisions are aimed at achieving those goals. Those decisions take time. We can subdivide that time as follows:

- **Desire**: the goal that emerges and motivates the decision maker
- **Strategy**: the steps that the decision maker follows – some internal, mental steps, and some external information gathering steps – to achieve their goal
- **Choice**: the final choice of action (for example buying a product) that the decision maker takes, which is intended to achieve their goal
- **Experience**: the period after the choice is made, when the decision maker experiences the effects of their choice and learns whether the goal was achieved or not.

The decision process can be divided up in various ways, but this one seems a natural fit to the key mental actions that take place during the process.

While undergoing this process – trying to make the right decision to achieve our goal – the mind operates under severe capacity constraints. Three of the most important constraints are:

- **attention** constraints: limits on how much information the brain can take in in a given period
- **calculation** constraints: limits on our ability and speed at combining and weighing up different pieces of information internally, especially in the context of abstract thought
- **myopia**: the fact that all mental processes can only incorporate influences from the present time and place – decisions cannot directly reflect future benefits or costs

Other constraints are likely to apply – for example an imperfect ability to remember facts and retrieve them from memory again – but the above are the most important.

Consequences of this framework

Once we start thinking about thinking using this model, many phenomena start to become clear.

First, we can see that in order to make valid decisions in a fast-changing world with lots of information, we need to develop mental shortcuts. The heuristics that pervade behavioural research are exactly that: shortcuts to help us solve problems as well as is practical, given that it's impossible to solve them perfectly.

We learn other kinds of shortcuts as our brains develop. We learn to break down large problems into smaller units. We learn specific mental strategies and heuristics to solve those smaller problems. We learn to associate the strategies with particular contexts, images, words, or goals – so that we can retrieve them more quickly with less conscious thinking.

Because of myopia, we can see that loss aversion is natural: because we don't know about the future, gains are of uncertain value. Losses are painful and to be avoided. We can see that as we experience the consumption of products or the results of certain actions we've taken, we will develop habits. If they worked out OK, we'll be more likely to use them next time we have the same need.

We can understand why particular heuristics and shortcuts are especially powerful. The idea of copying what others do is a very easy way to save calculation time, and entrenches our reliance on social cues. The culturally specific aspects of those social cues are a strong influence on how we learn behaviour, and will be discussed as a special case at the end of this paper.

For practitioners, this framework gives a way to consistently analyse a group of consumers in any particular situation, and understand how they think. We don't need to rely on luck – will we come up with a useful behavioural idea for this particular project? – but can systematically work through the four decision stages, the three constraints and the network of subgoals and associations that are likely to apply in a particular context.

We cannot be sure yet which framework will become accepted as the standard set of "laws" across the behavioural economics discipline. Whether you choose this framework or a different one, the use of a single coherent approach will strengthen your application of behavioural principles, giving you confidence that you have identified all possible angles for behaviour change in a given context.

When we do analyse consumers in the information processing framework, one of the solutions that shows up time after time is the idea of *intangible value*. The next section discusses that concept.

Intangible goods: Behavioural economics for happiness

One of the key questions in economics is how to maximise consumer welfare. In other words, how to make people as happy as they can be. Traditional economics only has one way to do that: allocation of scarce material goods. The fundamental theorems of economics are about how to divide up the material goods in the world – usually by trading – to find the allocation that will make everyone happiest (subject to the amount of wealth and income we all start out with, of course).

Many findings in behavioural economics, however, show that people's happiness, and their choices, do not only depend on the amount of traditional economic goods they end up with. Whether it's spending money to punish others for unfair behaviour (Fehr & Gächter, 2000), or paying – or being paid – to attend an economist's poetry reading (Ariely, Loewenstein & Prelec, 2006), consumers choose goods that are intangible, whose value is shaped by the context they appear in.

Intangible goods may now be the most important part of the economy. In the world's rich countries the basic material needs of most people have been met: food, water, shelter, clothing and health (I do not downplay the urgent need to achieve the same in other countries, and will come back to that). Developed-world citizens now spend most of their time pursuing goals which are not tangible.

These intangible goods include psychological goals such as entertainment or reassurance. They include branding, personal or group identity, and aesthetics. They include the desire for completeness, or to know the origin of the product you're consuming. They include the signals of quality we rely on when we can't directly determine how good something is.

All of these intangible goods trigger one of the heuristics or mental strategies that originally developed to achieve concrete, tangible goals. We still practise and habitually rely on these heuristics, independently of the circumstances in which they developed. The larger strategies which we follow to achieve important goals are broken down into sub-goals and sub-strategies – that is the only way to achieve them. Because those sub-goals, the intermediate achievements along the way towards something we really care about, are not concretely valuable in themselves, we train our brains to place value on the interim achievements. That value may take the form of a sense of achievement, or the resolution of a worry. Through repeated exposure to subgoals like this, we learn to seek that same sense of achievement for its own sake – not just as a step towards concrete goals.

That sense of achievement – an intangible good with no direct survival value – starts out as a way to motivate us to complete important tasks. It turns into the reason we play video games. The heuristic that first taught us that brands can be a signal of quality, ends up leading us to care about brands as a value in themselves. The heuristic of seeking out new opportunities and sources of food in our environment manifests in the modern world as an aversion to boredom – the foundation of the entertainment industry.

As a rule, any heuristic which is a reusable, habitual step in achieving larger goals can be subverted. We can trigger this same heuristic by providing intangible goods which look, to the brain, like the beginning or the end result of that process. And the more our material needs are satisfied, the more those intangible goods come to fill our day-to-day activities and ultimately dominate economic activity. There is nothing wrong with this – it is how we make ourselves happy in a world where we don't need to rely on food, warmth or reproduction as the only sources of utility.

Nor do intangible goods need to be introspective or selfish. The pursuit of a meaningful life, altruism and the quest to understand the world and make it a better place are all intangible; at least for the individual who undergoes them. Only by communicating intangible value to the people of the rich world can we show it's in their own interest to share the earth's resources with those elsewhere. With a happy side effect: by definition, intangible goods consume no non-renewable resources.

Intangible value is not just a big piece of the economy – it is a big chunk of the market value of most profitable products and services. Traditional economics, based on scarce physical goods, has no place for profit – prices for commodity goods are competitively lowered until

they reflect only the marginal cost of production. These theories will need to be redesigned to incorporate intangible goods whose only limits arise from their changing effects on our minds.

This value can arise at any of the four stages of consumption: in the *experience* of the good, or in the decision process itself – as a psychological *desire*, a *strategy* we like to follow, or from the comparisons we make in our *choices*. The appropriate price for a product reflects intangible value as well as tangible, and will make the buyer's experience consistent with their decision process.

For this reason, a deep understanding of behavioural economics, cognitive processes and consumer psychology is absolutely necessary to the design and successful marketing of new intangible goods. More than that, the same understanding is what creates the opportunity for all the world's population to have a happy, satisfying life without destroying the earth.

Understanding culture when applying behavioural economics

Behavioural economics and decision making science are being enthusiastically adopted across different industries all over the world, along with a growing acknowledgement that we're all a little bit irrational. However, we're not all irrational in the same way.

Much of the research on decision making has been conducted in Western countries which means that we are implicitly assuming that these cognitive biases are universal and function largely in similar ways in different cultures. 96% of samples in psychological studies come from countries with only 12% of the world's population (Arnett 2008), which means that a randomly selected American is 300 times more likely to be a research participant than is a randomly selected person from outside of the West. These countries are commonly referred to as WEIRD (Western, Industrialised, Educated, Rich and Democratic), which makes them vastly unrepresentative as a sample in psychological research (Henrich, Heine & Norenzayan, 2010).

Given the emphasis of many decision making theories on the impact of immediate context such as framing or priming, it is surprising how little culture is taken into account. While social psychology has a wealth of knowledge on how cultural context affects us, theories in cognitive psychology rarely consider culture as a factor due to implicit assumptions about the universality of cognitive processes: that is, *what* we think about may vary, but *how* we think is always the same. However, even fundamental cognitive functions such as how we see colour (Regier & Kay, 2009) or simple optical illusions (Henrich et al. 2010) can differ greatly based on the cultural context you grew up in.

When speaking about culture, we often refer to aspects such as values, social norms, beliefs and traditions. However, despite long-standing debates within academia, there is no commonly accepted definition: instead, researchers focus on certain aspects of culture depending on the phenomena they are investigating. Economic, social and linguistic environments strongly shape people's behaviour, motivations and preferences: for example, a study investigating time discounting (i.e. whether we value immediate rewards more than those in the future) found that differences at country level related to wealth and education as well as to cultural factors such as individualism, the importance of tradition and whether

time was conceptualised as linear or cyclical (Wang, Rieger & Hens, 2011). However, without a unifying framework of conceptualising culture, it is challenging to grasp the bigger themes underlying cultural differences. A more effective way of understanding culture's impact on how BE biases work differently in different countries is to look at some measurable differences between cultures which *do* affect how a person's cognition works while they make decisions. While other frameworks exist, one of the most powerful ones is a person's self-concept.

The most widely analysed dimensions of culture are *individualism* and *collectivism*: while individualism is characterised by detachment from relationships and community with the individual seeing himself as relatively independent from others, collectivism is characterised by the importance placed on relationships, roles and status within the social system, with the individual seeing himself inseparable from his network of social relations (Hofstede, 1984). At the level of the individual, these cultural mindsets affect how we see the world through organizing the information we have about ourselves, directing our attention to information that is perceived to be relevant, shaping motivations and influencing how people appraise situations that influence their emotional experiences. These self-concepts can be placed on a continuum between two poles: *independent* and *interdependent selves* (Markus & Kitayama, 1991), with independent self-concepts typically more prevalent in individualistic countries and interdependent in collectivistic ones, although variation exists within countries. Those termed independent define themselves through internal attributes such traits, abilities, personal values and preferences, and see behaviour as being under the control of the individual, arising from internal attributes such as preferences (e.g. what you buy reflects your identity). Conversely, those termed interdependent define themselves through relationships with others and don't necessarily see behaviour as a reflection of internal traits but situated in a specific context – your preferences might radically change depending on what social circumstances you are in (ibid).

This has profound consequences for some fundamental concepts in psychology such as *cognitive dissonance*: if you see your behaviour reflecting your true self, which is ideally consistent across time and circumstances, holding two or more conflicting ideas will make you feel uncomfortable. However, if you instead assume that your preferences merely reflect the current social circumstances and can therefore change from one moment to the next, conflicting ideas will not pose a threat to your identity, which means the concept of cognitive dissonance exerts much less power on consumers in e.g. East Asian cultures (Heine & Lehman, 1997). As cognitive dissonance, often seen as irrational, is commonly used in advertising, understanding the extent to which it is prevalent in the cultural context is crucial to efficient marketing communications.

Whether we see ourselves as separate individuals or intertwined with others is also important in understanding consumer choice. Is choice an individual endeavour, reflecting our internal attributes or one that takes other people into account and says little about the chooser? In Western cultures, choice is seen as an act of self-expression: uniqueness is desirable and choices are a way to paint a portrait of yourself for the outside world (Kim & Drolet, 2003), so we vary our choices in an attempt to gain a sense of "specialness". In behavioural economics, this is called *diversification bias*: we seek variety in both what and

how we choose which can lead to seemingly irrational behaviour (Read & Loewenstein, 1995). However, the majority of research on this effect has been conducted in Western countries, especially the US, where personal choice is one of the key cultural values.

When choice is an act of self-expression, it becomes hugely important for the individual, and the psychological impact of either lack of choice or failed choice is larger, leading to strategies such as variety-seeking. In collectivistic cultures choice is often an interpersonal task, so making a choice that portrays oneself in the most positive light is not as big a concern. Subsequently, research has shown the diversification bias to be weaker in these cultural contexts (Kim & Drolet, 2003).

Self-concepts also affect the strength of another well-known behavioural economics concept: the *endowment effect*, where simply owning an object enhances its perceived worth, and owners value objects substantially (and irrationally) more than potential buyers do. Because owning an object activates an association between it and the self, the Western focus on self-enhancement means this association automatically boosts the object's value. Therefore, the strength of the endowment effect is influenced by the degree to which self-enhancement is culturally valued, with recent research suggesting that the effect is indeed stronger in a Western context (Maddux et al. 2010). In practice this means that sales tactics such as free trial or "bait and switch" may be less effective in non-Western contexts with weaker endowment effect combined with weaker cognitive dissonance.

Understanding the potential cultural influences on thought is crucial for everyone attempting to accurately describe and predict consumers' decision making. Insights from behavioural economics might well be applicable in different cultures, but we need to have highly nuanced sense of the specific characteristics of each cultural context and its impact on consumer decision making to ensure effective applications. As Dan Ariely notes (Ariely, 2013), the biggest challenge for behavioural economics in the next 10 years is understanding the generality of the findings so far and to what extent the effects discovered carry over in different contexts. As we gradually abandon the error of rationality, we should not entrench a new mistake: universality.

This section includes some abridged material from 'Globally irrational or locally rational?' (2013) in Research World.

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Beyond Academia: How Psychology Has Been Adopted in Advertising and Communications

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There is a widespread assumption that the advertising world is rife with the use of subconscious psychological techniques that persuade people to buy, but this is more misconception than fact. While many campaigns feature phrases or imagery that have been shown to be effective in the scientific literature, these have often been arrived at by trial and error, rather than through a conscious adoption of insights from academic research. In other words, advertisers have been working backwards from previous success, rather than forwards, generating ideas directly from published findings.

At certain points in history, however, psychology has had a greater role in mainstream advertising than it has today. Towards the late nineteenth century, people began to realise the importance of studying the mind to enhance the power of advertisements. In his essay 'The Psychology of Advertising', Walter D. Scott (1904) says, "The time is not far away when the advertising writer will find out the inestimable benefits of a knowledge of psychology." Scott refers extensively to the importance of evoking mental imagery, and of words conjuring tastes and sounds, which he suggests was lacking in contemporary copywriting. This view of psychology is reminiscent of Wundt's theories of introspection, that internal events could be measured objectively after extensive training, which was the prevailing view at that time.

As Freud and the psychoanalytic movement gained traction in the years that followed, one man trained in this school of thought, Ernest Dichter, revolutionised advertising through what he called "motivational research", i.e. focus groups and in-depth interviews (Schwarzkopf & Gries, 2010). The mechanisation of industry after the Second World War meant that consumer products became increasingly homogenous, and sales therefore relied on creating an emotional connection with the specific brand. By putting the customer 'on the couch' as a psychoanalyst, Dichter was able to infer their unconscious associations with the brand, creating an overall image of the brand's personality which he could then use to tailor campaigns (The Economist, 2011).

Psychology began to fall out of favour with advertising towards the end of the 1960s as the cognitive revolution took hold, replacing creative interpretations of data with quantitative analysis. This new wave of psychology partly confirmed the Freudian hypothesis that there is an unconscious mind we do not have access to: In their seminal paper, Nisbett and Wilson (1977) found multiple examples of mental processes that could not be articulated by the individual, from memory retrieval to problem solving, and even introspective tasks like reasons for a particular choice or enjoyment of an activity that seemed like they should be accessible to the actor. Importantly, this and other studies showed that people could unwittingly post-rationalise decisions with reasons that could not be true, and even give

reasons for decisions they had not made (e.g. Johansson, Hall, Sikström, Tärning & Lind, 2006). While this shed doubt on the usefulness of focus groups, without psychoanalysts to interpret what the participants really meant, these interviews regained popularity in the 1980s while psychology remained on the sidelines.

However, the rising popularity of behavioural economics and choice architecture in recent years (Thaler & Sunstein, 2008) has prompted a resurgence of psychological insights in many domains involving human behaviour, particularly public policy. This trend has also swept into marketing, leading to the launch of #ogilvychange, a behavioural science practice within the wider Ogilvy group. Below are three #ogilvychange case studies, illustrating how behavioural principles have been used over the past two years on diverse projects to increase sales, conserve resources and reduce antisocial behaviour.

Case study 1: Selling more newspapers over the phone

The Times and The Sunday Times wanted to use these new behavioural concepts to optimise their call centre scripts, increasing sales and retention levels and boosting staff confidence. The agents were taught the following four principles of behavioural science and how to apply them.

1. Social norms

The actions of other people act as reassurance for us that what they are doing is normal and beneficial, so we are greatly influenced by those around us (Goldstein, Cialdini & Griskevicius, 2008). There are no explicit norms to follow when buying a newspaper subscription over the phone, so these norms can be created by the agents to direct customers to the most appropriate packs, e.g. “This is our most popular pack this month.”

2. Loss aversion

Avoiding loss is more motivating than pursuing equivalent gains (Tversky & Kahneman, 1981), so emphasising what the potential customers could stand to lose out on results in more sales than informing them what they could gain. This is particularly effective for customers trying to cancel or downgrade their subscription, who can be reminded of the products and services they would be missing out on by making these changes.

3. Framing

People respond to information according to how it is framed, e.g. people are more likely to opt for surgery with a 9 in 10 chance of survival than a 1 in 10 chance of dying, despite these figures being identical (e.g. Tversky & Kahneman, 1991). Some agents were found to be talking about the product quite negatively, e.g. “If you are not happy with the product, you can cancel at any time”, undermining the customer’s confidence in its quality. Therefore, the key instruction for this principle was to always talk about the product positively.

4. Simplicity

If something is clear and easy to understand, we tend to trust it more and value it more highly, a bias known as the fluency heuristic (Song & Schwarz, 2008). Many call centre

agents were using their technical marketing terms to describe the packs or take a customer's information, which could have negatively impacted the customer's response to the agent and the deals they were offering if they did not understand. The agents were therefore encouraged to speak in as simple terms as possible.

Following the sessions with the agents, calls were listened to remotely and coded for the principles used and the outcome. Our analysis showed that calls using one or more principle(s) were three times more likely to result in a successful sale or retention than those using none, an effect that was significant at $p < 0.01$.

Case study 2: Designing the environment for sustainable washing habits

Women in Indonesia traditionally wash their clothes in several different buckets, rinsing three times, an effortful process that takes its toll both on their backs and the water supply. A new product was developed that could wash clothes as effectively with only one rinse, but sales were surprisingly low among the women who could benefit the most from it. To produce the necessary behaviour change, a bucket was designed based on the following behavioural theories.

Effort-reward heuristic

A key barrier to the adoption of the new product is that it seems too good to be true, i.e. customers do not believe it could work as well as their existing product when it requires fewer steps. Counter-intuitively, making the process longer could make the product more popular, as people will value it more highly the more work they have to put in (Hilligoss & Rieh, 2008).

This concept is built into the bucket in three ways. Firstly, adding measuring lines on the bucket makes accuracy seem vital, lending scientific credibility to the process. Secondly, a tap on the side of the bucket adds further implicit rigour to the method. A third and final feature is adding 'ripple release' technology inside the bucket; ridges that can be used to rub clothes against for better rinsing. These three features, in combination with specific washing instructions detailing the new, more complicated process, should be sufficient to give people more faith in the efficacy of the product.

Choice architecture

The process of acquiring the bucket also ensures sustained behaviour change: The buckets will be free in exchange for the three old buckets that are currently being used for washing. This firstly means that the environment is changed permanently, and without the old buckets it is more difficult to revert to old washing habits. Secondly, walking through the village with the old buckets, and again having replaced them with a new bucket, allows others to see this exchange taking place, therefore encouraging them to do the same through the power of social norms (Goldstein, Cialdini & Griskevicius, 2008). Thirdly, by framing the bucket as an upgrade and a gift in this way, people may feel bound to using the product out of reciprocity.

The bucket is still in prototype and will soon be tested to see if these features have the desired effect, but this example illustrates how academic insights can inform product design to produce behaviour change that is in the best interests of the client, the consumer and the environment.

Case study 3: Reducing antisocial behaviour with painted shutters

In turn, academics and policy makers alike could benefit from the creative input of advertisers to translate theory into practical applications and innovative behavioural interventions, such as the Babies of the Borough project, an effort to repair the damaged community of Greenwich after the riots in 2011. Woolwich was particularly affected by the London riots, and the area was still subject to aftershocks of antisocial behaviour months later. The broken windows theory (Sampson & Raudenbush, 2004) goes some way to explaining this: Property that is vandalised and not repaired acts as a signal that the community is not cared about, and therefore encourages further vandalism and other antisocial acts. The impact of the riots was still visible in Woolwich, and could therefore have perpetuated this cycle of violence.

Affective response

Social psychology research has shown that the faces of infants produce an innate caring response in humans, an evolutionary strategy to ensure babies are more likely to be cared for by their parents (Glocker et al., 2009). The implication of this is that images of babies could offset more aggressive emotions and therefore potentially reduce antisocial behaviour. Therefore, in the clean-up effort, an additional twist was included; the faces of babies were painted onto new shop shutters, which had been torn off during the riots. Importantly, they were the babies of local residents, which added an even greater sense of community to the project.

Decrease in crime

Metropolitan Police reported an 18% decrease in crime on that street the following year, and not one of the painted shutters has been vandalised in the two years since, while some of the surrounding unpainted shutters have been targeted. While it is difficult to establish a cause and effect in this example, these findings suggest that at the very least – and hopefully unsurprisingly – people are reluctant to attack an image of a baby's face. This project would never have been possible without the academic research to spark the ideas, and the creative minds to translate them into intervention.

Conclusion

To conclude, it has never been a more exciting time to work in behavioural science, particularly as a branch of advertising, with the sudden influx of research – largely untapped for forty years – to inform campaigns and products. While many of these concepts have been arrived at independently by advertisers themselves, no systematic frameworks have yet been put in place to capitalise on the insights collected over the years. Referring to the experimental findings of psychologists and behavioural economists allows for truly innovative ideas as they are not based on previous successful campaigns. Advertisers and

marketers can also feed back into academia and policy on an empirical basis with data regarding the success of their techniques, and also with a creative spin on the existing theories to produce powerful interventions.

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APPENDIX – AUTHOR AND CONTRIBUTING ORGANIZATION PROFILES

Authors

Alain Samson (Editor)

Alain Samson was born in Zurich, Switzerland. At the age of 16, he enrolled at KV Zurich Business School, while pursuing an apprenticeship in business administration at Orell Füssli, a printing and publishing company with roots in the early 1500s. He then joined Swiss Television and briefly entertained the idea of becoming a TV journalist, but instead embarked on an academic journey to the United States. After studying at UC Berkeley and the University of Michigan, Alain moved to London. He completed a PhD in Psychology at the London School of Economics in 2007.

His scholarly interests have been eclectic. Alain's research and writings have included topics in the areas of culture and cognition, social perception, and consumer psychology/behavior. He began to work as a freelance researcher and consultant while completing his doctorate at the LSE. Most of his focus today is on behavioral science applied to consumer behavior, working both independently and through LSE Enterprise, the consulting arm of the London School of Economics. Alain combines conceptual, methodological ('test and learn') and analytical expertise, which he has applied in projects in media, consumer goods, higher education, energy, finance and government.

Alain has published scholarly articles in both marketing (e.g., Academy of Marketing Science Review) and psychology journals (e.g., Journal of Economic Psychology). He is the author of **Consumed**, a Psychology Today online popular science column about consumer psychology and behavioral economics. He is also the owner of the **Behavioral Economics Group** and **BehavioralEconomics.com**. Alain can be contacted at **alain@behavioraleconomics.com**.

George Loewenstein (Foreword)

George Loewenstein is the Herbert A. Simon University Professor of Economics and Psychology at Carnegie Mellon University and the Director of Behavioral Economics at the Center for Health Incentives at the Leonard Davis Institute of the University of Pennsylvania. He received his PhD from Yale University in 1985 and since then has held academic positions at The University of Chicago and Carnegie Mellon University, and fellowships at Center for Advanced Study in the Behavioral Sciences, The Institute for Advanced Study in Princeton, The Russell Sage Foundation, the Institute for Advanced Study (Wissenschaftskolleg) in Berlin and the London School of Economics. He is past president of the Society for Judgment and Decision Making, and a fellow of the American Academy of Arts and Sciences. His research focuses on applications of psychology to economics, and his specific interests include decision making over time, bargaining and negotiations, psychology and health, law and economics, the psychology of adaptation, the role of emotion in decision making, the psychology of curiosity, conflict of interest, and "out of control" behaviors such as impulsive violent crime and drug addiction.

Loewenstein is one of the founders of the field of behavioral economics, the field of neuroeconomics, and is one of the early proponents of a new approach to public policy called, variously, 'asymmetric' or 'libertarian' paternalism. He has published over 150 journal articles in top journals in economics, psychology, law, medicine and other fields, numerous book chapters, has written or edited 6 books on topics ranging from intertemporal choice to behavioral economics to emotions, and serves or has served on the editorial boards of numerous journals in different fields. He has served on multiple National Academy of Science and Institute of Medicine Panels, and has advised numerous corporations and organizations, including the NIH, USDA, CVS Caremark, Ascension Health, McKinsey, NPD, Aramark and many others. He has chaired numerous doctoral committees, taught intensive courses in behavioral economics at universities around the world, and organized various educational programs. He has received numerous grants and awards, from government agencies such as the NIH, NSF, USDA, and from foundations, such as the John D. and Catherine T. McArthur Foundation, the Hewlett Foundation, the Russell Sage Foundation, the Rockefeller Foundation, and many others.

Rory Sutherland (Foreword)

Born in Usk, Monmouthshire in 1965, Rory read Classics at Christ's College, Cambridge, before joining Ogilvy as a Graduate Trainee in 1988. After 18 months spent as the world's worst account handler (as a desperate remedial measure he was once booked onto a time management course, but got the date wrong) Rory became a copywriter in June 1990.

He has worked on Amex, BT, Compaq, Microsoft, IBM, BUPA, easyJet, Unilever, winning a few awards along the way. He was appointed Creative Director of OgilvyOne in 1997 and ECD in 1998. In 2005 he was appointed Vice Chairman on the Ogilvy Group in the UK in recognition of his improved timekeeping.

By an amazing stroke of luck (his brother is an academic) Rory first used the Internet in 1987. Hence he had the advantage in 1994 of knowing what it was and what it might do a few years ahead of many colleagues. Most people would have combined this knowledge of marketing and technology to make a fortune; not Rory. Instead he became the first Briton to have his credit card details stolen online, thereby losing £22.45. Perhaps to make up for this failing, Rory later became a convert to the new science of behavioural economics.

In his spare time, Rory collects self-aggrandising job titles. He was President of the Direct Jury at Cannes in 2007, and was elected President of the Institute of Practitioners in Advertising in 2009 for two years. Rory is also a visiting professor of Warwick University and was recently (2012) awarded an honorary doctorate (D. Litt) by Brunel University, he is also the Technology Correspondent of the Spectator, the world's oldest English language magazine. You can visit his blog at **http://snipr.com/da9bq.**

Rory is married with twin daughters of 12 (Hetty and Millie) and lives in the former home of Napoleon III in Brasted in Kent. Unfortunately in the attic.

George Gaskell (Co-author, 'Nudging in the world of international policymaking')

George Gaskell is Professor at the London School of Economics and the director of LSE Behavioural Lab. He is a behavioural scientist with three decades of experience in behavioural sciences research, of which the last 10 years devoted to research and teaching in the specific domain of behavioural economics. His research interests are: social psychology, research methodology, survey and qualitative research, consumer behaviour, social, economic and ethical aspects of the life sciences. He has published his work on the most important journals of psychology and methodology.

Cristiano Codagnone (Co-author, 'Nudging in the world of international policymaking')

Since 2011 Cristiano Codagnone holds a double academic affiliation, as aggregate professor at the Università degli Studi di Milano and as senior researcher of UOC (University Oberta de Catalunya) where he heads the research group Applied Social Sciences and Behavioural Economics (ASSBE). He has twenty-five years of experience in behavioural science, survey research, and economic research and 10 years of successful experience in delivering work for the European Commission. He worked at the European Commission Joint Research Centre IPTS (Seville) as Senior Scientists from October 1st 2009 until September 30 2011. At IPTS (Seville) Cristiano has launched together with Francesco Bogliacino and Giuseppe Veltri the behavioural economics studies research group. Since June of 2012 he has shown his expertise and management capacity in the implementation of the four behavioural studies realised by our consortium ("Study on Tobacco Labelling and Packaging"; "Re-test on Tobacco Labelling and Packaging"; "Testing of different approaches to CO_2/Car labelling and the effectiveness of mandatory consumer information in promotional material"; "Study on online gambling and adequate measures for the protection of consumers of gambling services").

Francesco Bogliacino (Co-author, 'Nudging in the world of international policymaking')

Francesco Bogliacino is both a behavioural economist and an econometrician and will ensure both experimental design expertise and the coordination of all activity concerning analysis of data. He is a top expert of between-subjects experimental design and of impact evaluation econometric methods. He has also worked as junior scientist at the European Commission Joint Research Centre IPTS (Seville) between 2008 and 2011. He is also an associated researcher of UOC ASSBE research group. Since June of 2012 he has shown his expertise and management capacity in the implementation of the fours behavioural studies realised by our consortium ("Study on Tobacco Labelling and Packaging"; "Re-test on Tobacco Labelling and Packaging"; "Testing of different approaches to CO_2/Car labelling and the effectiveness of mandatory consumer information in promotional material"; "Study on online gambling and adequate measures for the protection of consumers of gambling services"), where he performed the role of Deputy Project Manager. Francesco is professor at the Fundación Univeristaria Konrad Lorenz (Bogota, Colombia).

Francisco Lupiáñez-Villanueva (Co-author, 'Nudging in the world of international policymaking')

Francisco Lupiañez-Villanueva is a main expert of multivariate statistical analysis and survey research and has a long experience in processing and analysing large dataset with state of the art techniques (Factor Analysis, Principal Component Analysis, ANOVA, Structural Equations Models, Composite Indexes). He has also a consolidated experience in coordination and monitoring of field-work. He is Associate Professor at School of Information and Communication Science Universitat Oberta de Catalunya (UOC) where he is part of the mentioned ASSBE research group. He has also worked as junior scientist at the European Commission Joint Research Centre IPTS (Seville) between 2010 and 2012. Francisco has performed sophisticated multivariate statistic analysis on the data of the four behavioural studies realised by our consortium ("Study on Tobacco Labelling and Packaging"; "Re-test on Tobacco Labelling and Packaging"; "Testing of different approaches to CO2/Car labelling and the effectiveness of mandatory consumer information in promotional material"; "Study on online gambling and adequate measures for the protection of consumers of gambling services").

Giuseppe Veltri (Co-author, 'Nudging in the world of international policymaking')

Giuseppe Veltri is Lecturer in Psychology of Communication at Department of Media and Communication of the University of Leicester. He is also currently a visiting research fellow at LSE. His research interests focus on public opinion research, social representations, social network analysis, behavioural economics and social psychology of economic life. He has also worked as junior scientist at the European Commission Joint Research Centre IPTS (Seville) between 2008 and 2011. He is also an associated researcher of UOC ASSBE research group He has contributed to designing the experiments for the four behavioural studies realised by our consortium ("Study on Tobacco Labelling and Packaging"; "Re-test on Tobacco Labelling and Packaging"; "Testing of different approaches to CO_2/Car labelling and the effectiveness of mandatory consumer information in promotional material"; "Study on online gambling and adequate measures for the protection of consumers of gambling services").

Contributing Organizations

Advocacy

Advocacy helps brands trigger behavior change in a structured and scalable manner, by bringing to life the principles of Richard Thaler's *Nudge* and Robert Cialdini's *Influence*, via a proprietary engagement platform - TAP. Over the last three years, consumers have spent over two billion seconds on TAP interacting with brands.

Advocacy is today is the most awarded Word of Mouth Marketing agency in the world with six WOMMY awards at the annual Global WOM marketing summit, in the last three years. It is the only agency to have won two awards on measurement highlighting the proven ROI of its campaigns.

Advocacy has offices in China, India, Malaysia and Singapore, with capability to execute globally. Clients include Reckitt Benckiser, Procter & Gamble, L'Oreal, Fonterra, Kimberley Clark, Johnson & Johnson, Friesland Campina, Philips, and Colgate.

Advocacy was co-founded by Asit Gupta, one of the few marketers in the world to have worked in three out of the four BRIC countries during his 17 years with P&G Inc, BAT plc and DDB advertising.

Company website: **http://www.advocacy.asia**

BrainJuicer

BrainJuicer is a marketing and branding consultancy whose research tools are grounded in the behavioural and social sciences. Our aim is simple – to turn human understanding into business advantage.

Founded by entrepreneur John Kearon in 1999, BrainJuicer has grown rapidly to become one of the most influential and well-regarded research agencies. Behavioural science infuses everything we do – from our use of the "wisdom of crowds" to find successful concepts, to our award-winning ad testing techniques that put emotion back where it belongs at the heart of advertising.

In 2013, in the prestigious GRIT survey of research suppliers and buyers, BrainJuicer was voted the most innovative research company by both groups – the third year in a row. Its reputation for innovation is based on its embrace of behavioural science – as well as an international, full-service research business. BrainJuicer has a dedicated Behaviour Change Unit that works on changing real consumer behaviour for commercial and social clients.

BrainJuicer is based in London, with other offices in the US, Brazil, China, Singapore, France, Germany, Italy, The Netherlands, Switzerland, India and Australia.

Company website: **http://www.brainjuicer.com**

Decision Technology

With roots in academia and close links to various research institutions, Decision Technology specialises in helping businesses and policymakers understand and manage customer decision-making with insight grounded in behavioural science and psychology.

We deliver highly differentiated insight and end-to-end services that merge financial analysis and business advice alongside field research and customer insight. This hybrid approach, developed with our co-founder Professor Nick Chater of Warwick Business School, marries a necessary focus on commercial results with a practical understanding of what drives human behaviour.

Decision Technology is a trusted advisor to some of the world's largest organisations in both private and public sectors. We build long-term partnerships with our clients, whose markets span telecoms, utilities, retail, advertising, and finance. By employing a behavioural, experimental and statistical approach, our Brand, Trade and Offer practices help our clients to navigate and leverage the relationship between customer decision-making and winning strategies.

Company website: **http://www.dectech.co.uk**

Decode Marketing

Marketing is about behaviour change. Decode is a consultancy that leverages the latest insights from 'decision science' (cognitive & social psychology, neuroscience and behavioural economics) to increase marketing effectiveness. Understanding what drives decision-making and behaviour change gives greater analytical power, greater predictive power and helps companies to sell more.

Why did Dove's 'real women' campaign work in skincare but not in haircare? Why did the Tropicana redesign pass all the research hurdles yet lose $27m in sales? How did T-Mobile's relaunch drive a 49% sales increase? The answers lie in decision science.

Decode stays at the leading edge of developments by collaborating with the pre-eminent Universities for neuroeconomics such as the California Institute of Technology. Its consultants still practise, at Professorial and Doctoral level, in academe. Together with practitioners from advertising and brand management they form an interdisciplinary team of experts with a unique blend of capabilities; translating the latest scientific learnings into pragmatic and concrete marketing application. Decode's latest publication is *Decoded: The Science Behind Why We Buy* (Wiley 2013).

Company website: **http://www.decodemarketing.co.uk**

FehrAdvice & Partners

The mission of FehrAdvice & Partners is to initialize better and more accurate decisions in government, business and NGOs, in order to improve the performance and competitiveness of these institutions, especially in the field of corporate governance, policy making and behavioral change.

The advisory is based on the latest insights from behavioral economics. FehrAdvice & Partners AG meld these insights into a usable form for consulting and further develop them with empirical and theoretical studies. This results in an independent and unique advisory approach, the Behavioral Economics Approach BEA™, developed with one of the world's leading behavioral economics researchers, Prof. Dr. Ernst Fehr of the University of Zurich.

FehrAdvice provides consultancy in the design of high-performance markets and institutions, digitiziation & literacy, risk & financial decision making, energy & mobility, and health & ageing. Our practices include incentive design (incl. top-management compensation schemes), performance management optimization, behavioral change management, behavioral leadership-development, behavioral pricing, behavioral strategy, behavioral negotiation strategy and smart data approach.

Company website: **http://www.fehradvice.com/en/**

The Irrational Agency

Nando's, Betfair, confused.com, Grant's Whisky, Admiral Insurance, Johnston Press and many other clients have put their trust in the Irrational Agency. Why?

Perhaps it's because we take the time to understand their business, their customers and the science of behaviour - the three components necessary to achieve behaviour change. And perhaps it's because we use behavioural economics not to manipulate consumers - but to make them happy.

Our founders are Elina Halonen, a PhD researcher in psychology and marketing, and Leigh Caldwell, the author of behavioural pricing book, *The Psychology of Price*. With 20 years of experience running businesses, we provide consultancy powered by market research, using a wide range of behavioural market research tools to uncover whatever consumer insight you need.

The Irrational Agency approach is built on a unique model of how the human mind's built-in constraints shape our thinking during each stage of a consumer decision; and how releasing people from these constraints generates intangible value and creates happiness. Happy consumers mean more profits for our clients.

Company website: **http://www.theirrationalagency.com**

#ogilvychange

#ogilvychange is a behavioural science practice that combines the gravitas of leading research in cognitive psychology and behavioural economics with the communication expertise of the Ogilvy Group. Now two years old, we are working with some of the world's largest brands to change people's minds and behaviour for the better.

The practice was founded by the Vice Chairman of Ogilvy & Mather UK, Rory Sutherland, and Director of Strategy Integration, Jez Groom. Our team of choice architects works alongside our active community of behavioural science experts, including leading academics and practitioners applying these insights in the real world, to provide our clients with the best behavioural thinking in the field.

The little ideas from our big thinkers solve big behavioural problems.

Company website: **http://www.ogilvychange.com**