



The art of medicine

Changing minds about changing behaviour

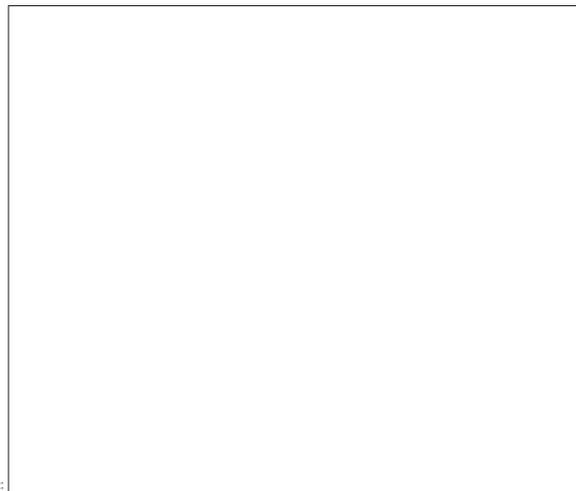
Most of us value our health highly yet act in ways that undermine it. If we ate and drank less, didn't smoke, and were physically more active, 40% of cancers and 75% of diabetes and cardiovascular disease would be avoided. Because these behaviours tend to cluster by deprivation, achieving these changes for everyone could also halve the gaps in life expectancy and years lived in good health between the rich and the poor. In the UK, around 16% of the population smokes, the lowest figure for many decades although among those who are poorest this rate is doubled. About 25% of those who consume alcohol do so at a rate considered harmful. Excessive eating explains much of why 65% of the population is overweight or obese. But our rates of inactivity top the lot: when measured objectively (rather than by our more generous self-reports) around 95% of us can be deemed "inactive" by failing to meet the guideline of 150 min of moderate intensity physical activity each week. Changing all these behaviours will need many different interventions operating at the same time. Critical will be the use of interventions that are effective at scale and with the potential to reach the entire population.

Informing individuals of the consequences of engaging in harmful behaviours has been core to many strategies for change. Such information can be extremely effective. A sign warning of shark-infested waters stops most of us from swimming. A sign warning of the killing properties of sofas, by contrast, has little impact. While this may increase our awareness of the harms of physical inactivity—and the associated sofa-behaviours of bingeing on junk food—its impact on actual behaviour is, at best, modest. High hopes abound that personalising risk information—giving people their chance of developing a disease—will prove more

effective. Such hopes are ill-founded. But enabling policy makers and the public to understand the reasons why could presage the implementation of interventions that do change behaviour benefiting the health of all.

Personalising someone's risk of developing a potentially preventable disease often involves using one or more of a range of biological markers. This includes blood pressure, body-mass index, blood cholesterol, and gene variants. The expectation is that such information—revealing to an individual that which is usually hidden—will motivate them to reduce their risks by, for example, becoming more physically active, attaining a healthier weight or stopping smoking. But do they? The bottom line is that—based on the existing evidence from studies involving feedback using a wide range of biological markers—personalised risk information doesn't change behaviour. While such information can change how people think about their risks, critically it doesn't seem to change what they do. The fascinating question is why such information does not change behaviour.

In essence, environments exert a stronger impact on what people do than what's in their minds. Far stronger too than we like to believe—also known as the fundamental attribution error. Dual process models of human behaviour—popularised by Daniel Kahneman's book *Thinking, Fast and Slow*—describe the brain processes that regulate behaviour. Put simply, everything we do is regulated by two sets of interacting processes, conscious and non-conscious. The former is goal-directed, guided by explicit beliefs and values but is slow and limited in capacity. We require it for doing hard sums, learning a musical instrument, and avoiding alcohol in environments that readily cue drinking. It is complemented by a non-conscious set of processes. These are fast, based more on feelings and automatic associations—I see a cigarette lighter, I crave a cigarette; I open my fridge after work, I reach for a beer. These associations regulate our more routine and habitual behaviours, such as taking a shower, travelling to work, and eating chocolate after dinner. Conscious and non-conscious processes mostly work harmoniously to navigate us safely, productively, and enjoyably through our day. But they conflict when two behaviours compete, as is often the case with health-related behaviours: a routine of lying on the sofa each evening with a beer competes with a health goal of 10 000 steps a day and no alcohol on week days. Risk information is a weak intervention in this system. It targets the conscious set of processes least involved in regulating our routine or habitual unhealthy behaviours. In short, information-based approaches to changing behaviour are based on partial models of human behaviour, neglecting the non-conscious



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processes that effortlessly activate most of our behaviour particularly routines and habits.

But herein lies a clue to more effective approaches to changing behaviour, namely targeting the non-conscious processes readily activated by the cues that surround us. These include the glimpse of a beer logo at a football match, the escalator in front of us, and the smell of fresh bread drawing us to the back of a supermarket past the seductive “two for one” offers on any number of unhealthier foods and drinks. We negotiate multiple environments—physical, economic, digital, social, cultural, and more. All of these contain a myriad of cues that, most often without our awareness, activate the many behaviours in which we engage at any one time—be it reading while enjoying a slice of cake or lounging on a sofa with a glass of wine and a cigarette. Identifying the most potent cues is a Herculean task.

My interest in behaviour stems from my first degree when I learned about the psychologists working after World War 2 to understand “man’s inhumanity to man”. Stanley Milgram’s experiments, for example, brilliantly illustrated the power of situations on our behaviour irrespective of our values, an observation informing much of the research in my group today. Our focus is on just one small set of cues—the physical cues in our immediate environments that subtly shape our behaviour—sometimes known as nudges. The concept of nudging was popularised by Richard Thaler and Cass Sunstein’s book *Nudge: Improving Decisions About Health, Wealth and Happiness*. It built on a century of psychology highlighting our exquisite sensitivity to subtle environmental cues—be it the etching of a housefly in a urinal “to improve the aim” or the chevrons painted on a road to create an illusion of speed to slow drivers. Health-related nudges include the design of tableware, drinking glasses, and cigarette packs. Their impact can be large. For example, the results of our Cochrane review on portion, package, and tableware size suggest that removing larger sizes could reduce the daily energy intake in UK adults by 12–16%—up to 279 calories a day, and in US adults by 22–29%—up to a staggering 527 calories a day. Serving the same amount of wine in larger glasses can increase sales in a bar by up to 14%. The mechanisms behind this effect are currently unclear but likely include a misperception of how much has been served and drunk. Changing the design of cigarette packs to remove the branding makes the warning labels more noticeable and reduces their appeal, particularly to children.

While evidence accumulates on which cues to target, it is sufficiently clear that to change behaviour at the scale needed, minds need to be changed about how to achieve this. Policy makers and researchers need to move away from the idea that changing minds to motivate individuals to resist our unhealthy environments changes behaviour—it doesn’t. Informing people about their harmful habits—such as the adverse effect on weight of drinking a couple of cans

of sugary drinks a day—can, however, still be of value. It can increase support for other interventions that effectively tackle these harms, such as taxing sugar in these drinks, and, in the right environments—where, for example, the cheapest and greatest range of drinks are for those without sugar—such information could change behaviour.

But achieving this requires us to move towards the idea of redesigning our environments—from redesigning cities to encourage physical activity to reducing the size of tableware in restaurants to tackle obesity—to transform lives as well as health systems groaning under the huge and growing burden of preventable diseases such as type 2 diabetes, which already accounts for over 8% of the UK’s National Health Service budget and 23% of US health-care dollars.

So, whose minds need changing? We can start with policy makers and the public. Policies for changing behaviour persist in having the provision of information as a core component. This partly reflects a lack of awareness of the evidence. More importantly, it reflects the reluctance of many governments to change environments which will often require regulation or legislation. Such hesitation is further strengthened by the prospect of litigation by the industries whose profits would take a hit. Battles instigated by these industries to prevent effective policies have recently played out in court rooms in the USA, Scotland, and England. These have involved the soda industry (capping of the size in which soda bottles can be sold outside of stores), the alcohol industry (setting of a minimum unit price on alcohol), and the tobacco industry (removing branded packaging on cigarettes). Public support for such changes—or stronger still, demand—seems key to emboldening policy makers and politicians to change our environments to improve our health. Without such a call, other interests will continue to shape our environments.

How can we change minds about how best to change behaviour? Preliminary evidence is emerging that public support for changing environments by nudging and taxing is predicted by three factors: first, holding an implicit “dual process model”—such as believing that obesity is caused more by our environments than by “free will”; second, perceiving that changing a cue in the environment—such as taxing sugary drinks—is effective; and third, judging that changing a cue—such as the size in which sugary drinks are sold—is fair. Whether targeting these and other beliefs increases public support for changing environments remains to be seen. Changing minds about changing behaviour involves making conscious the non-conscious nature of much of our behaviour. Creative minds are required to communicate this. A job perhaps for the Marketing Men who helped us get into this state in the first place?

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