Why is changing health-related behaviour so difficult?

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Abstract

Objective—to demonstrate that six common errors made in attempts to change behaviour have prevented the implementation of the scientific evidence base derived from psychology and sociology; to suggest a new approach which incorporates recent developments in the behavioural sciences.

Study design—the role of health behaviours in the origin of the current epidemic of non-communicable disease is observed to have driven attempts to change behaviour. It is noted that most efforts to change health behaviours have had limited success. This paper suggests that in medicine and policy making, discussions about behaviour change are subject to six common errors and that these errors have made the business of health-related behaviour change much more difficult than it needs to be.

Methods—overview of policy and practice attempts to change health related behaviour.

Results—the reasons why knowledge and learning about behaviour have made so little progress in non-communicable disease prevention are considered, and an alternative way of thinking about the behaviours involved is suggested. This model harnesses recent developments in the behavioural sciences.

Conclusion—it is important to understand the conditions preceding behaviour psychologically and sociologically and to combine psychological ideas about the automatic and reflective systems with sociological ideas about social practice.

Keywords

behaviour change; public health; psychological theory; social practice; non-communicable disease

Introduction

The short answer to the question posed in our title is that it is difficult because policy makers consistently and habitually commit a number of errors when they set about changing health related behaviour. We draw attention to these six errors and suggest a different way of

thinking about behaviour change using recent understandings derived from the social and psychological sciences.

That behaviour is critical to the health of the public is undeniable. The number of people in the world with type 2 diabetes is expected to rise from 366 million at the present time to 552 million in 2030(1); and whereas about 17 million people died from cardiovascular disease in 2008, some 23 million are expected to do so in 2030.(2) The response to and understanding of these epidemics must involve human behaviour. However it is not just individual behaviour of course which drives these epidemics. Behaviour takes place in social environments and efforts to change it must therefore take account of the social context and the political and economic forces which act directly on people's health regardless of any individual choices that they may make about their own conduct.(3,4)

The importance of social, political and economic circumstances notwithstanding, the policy default has traditionally been behaviour change extracted from the contexts within which behaviour occurs. In some ways this is not surprising because the drivers of the epidemics of non-communicable disease smoking, diet, alcohol consumption and physical inactivity – are self-evidently behaviours. Foregrounding behaviour not only appeals to the apparently obvious but also achieves two other things. It avoids having to confront the complexity of the social, political and economic factors which influence people's health and therefore the powerful vested interests who may not want people to change their behaviour to more healthy ways of living.

Changing health behaviours is therefore an attractive policy approach. What we focus on here is not that the broader social and economic issues should be considered, but rather that even in their own terms, efforts at behaviour change are not done very well. This is in spite of the fact that a great deal is known about the science of how to change health-related behaviour. The scientific literature is extensive and evidence based guidelines from NICE for example carefully describe how health behaviour change interventions can be made part of standard health and social care practice.(5) Yet over the years most efforts at getting people to change behaviour have had only limited success.(6) Our thesis is that although much is known, there has been a dispiriting failure by policy makers and politicians to put into practice what the science shows to be effective, preferring instead a range of approaches based on nothing much more than anecdote, gut feeling and common sense.

This paper outlines some of the typically poor reasoning that frequently gets applied to health related behaviour change in non-communicable disease prevention by politicians and policy makers and suggests an alternative way of thinking about the behaviours involved. We argue that in policy making (and often in medicine too!), discussions about behaviour change are subject to six errors and that the repetition of these errors has made the business of health-related behaviour change much more difficult than it needs to be.

Six common errors

1   It's just common sense

The overarching problem is what amounts to an appeal to common sense, and this appeal to common sense is not only an error in itself but also leads, we argue, to the other errors we draw attention to below. By common sense we mean the idea that understanding human behaviour is so obvious that it needs little or no serious thought. It is, we suggest, deliberately anti-intellectual and anti-scientific. It sees itself as grounded in the real world and as therefore different from the woolly ideas produced by ivory tower academics, who are by definition divorced from reality. Schematically the argument goes that it is obvious what needs to be done, so let's just get on and do it.

Quite apart from the philistinism embedded in such arguments, they are patently false. If changing behaviour was simply common sense, we would all be able to make whatever changes we wanted to whenever we wanted, and we don't. So there is clearly more to it than that - ask anyone who has tried to give up smoking or lose weight. Change is difficult and requires sustained motivation and support. Just getting on and doing it is not the answer. Human behaviour is the result of the interplay between habit, automatic responses to the immediate and wider environments, conscious choice and calculation, and is located in complex social environments and cultures.(7) Moreover the behaviours which need to be changed are sustained and nurtured by highly profitable industries selling goods which make people ill – sugar rich, energy dense fatty foods and , alcoholic beverages as well of course tobacco.

The discourse of common sense needs to be confronted by the observation true of all science, which is that just because something appears to be obvious does not mean that we should not bother to study it.Nor does it mean that we can know little or nothing about it scientifically and we certainly shouldn't default to simplistic ideas to answer what are actually complex and difficult questions.(8) With respect to human behaviour we must be clear that there is a science and more than two centuries of psychological, sociological and anthropological evidence which may be pressed into service. To ignore what we already know leads to much wasted effort and money. The assumption that we somehow intuitively know how to change behaviour and do not need to waste resources proving the obvious is wrong. Common sense has led repeatedly to ineffective interventions delivered at great cost in terms of money, resources and lost opportunities. It has also meant that the accumulated learning from the behavioural and social sciences has been ignored.

2   It's about getting the message across

In a slightly more sophisticated vein, some argue that changing health behaviour is simply a matter of getting the packaging of messages right. The idea here is very simple. If we could only get the message out there in some form which people could understand and identify with, then they would change in response. However, the psychological sciences demonstrate that simple stimulus-response models explain only a small fraction of human behaviour. So the notion that response to messages says all there is to say about behaviour change is wide of the mark. The analogy which is often drawn here is with commercial advertising.

Commercial organisations spend a great deal of money promoting their products but we have to be very careful about taking the analogy too far. Commercial advertising campaigns have a variety of aims and changing immediate purchasing behaviour is only one of them. They are also designed to raise awareness, to keep the company in the consumers' eye, to highlight new products, and the changes in the amount of market share which follows these campaigns tend to be modest – certainly not of the order of magnitude required to reverse the epidemics of type 2 diabetes, obesity and alcohol misuse. Moreover, the highly sophisticated ways in which products as different as car insurance and chocolate are advertised belies the notion that it is simply a response to a simple message. The investment in social marketing campaigns which borrow heavily from the commercial analogy - 'Change for Life' being one example - and their lack of tangible success suggests that the commercial analogy is flawed if applied simplistically to public health matters.(9)(10) We still have rising levels of obesity and NCDs and no scientific evidence that 'Change for Life' works. People are fatter than ever before.

Having said this, there have been some notably memorable health campaigns down the years involving advertising: "Don't die of ignorance" in the face of the HIV epidemic in the 1980s being a very good case in point.(11) But what we need to remember is that this was a *multi-level strategy* and the advertising or messaging was but one part of a broad many pronged policy and was not the only component of the campaign. There was also a specialist agency –the Health Education Authority - which was central in organising the campaigns and working with leading advertising agencies on the copy. It employed very sophisticated advertising and promotional approaches which were indeed modelled on commercial practice including for example long-run, multi-media campaigns to build up trust among different audiences. Regrettably the Health Education Authority was closed down in 1999 and the expertise it had developed was dissipated. A great national asset was squandered.

The key point is that purchasing a car or a tube of toothpaste is not the same kind of behaviour as making a decision to stop smoking or not to have unprotected sex. There is a great deal more to it than just getting the message across. Campaigns can have an important role and can be effective, but they are but one part of a total strategy and behaviour change is not just about simple messaging

3   Knowledge and information drive behaviour

There is another related common mistake of which the behavioural science literature warns the unwary. This is to privilege the role of information from expert sources as a driver of behaviour change. It borrows from traditional medical models of the doctor-patient relationship, the basis of which is that patients have an information deficit and come to see medical practitioners to consult them for their expertise to remedy their deficiency in knowledge and understanding.(12) In return they get information in the form of a diagnosis from which treatment proceeds. This is a model that works very well for patients with acute conditions. It tends to work less well for the chronic conditions that are the great contemporary medical challenge and where patients often have very high degrees of information and expertise,(13) and is even less effective in the realm of the prevention by way of changing behaviour.(6) Since for many practitioners, passing on expertise means

passing on information, what this model assumes is that if we tell people the negative consequences of eating too much or exercising too little, they will then change their behaviour accordingly. This is clearly not true and every front line clinician and practitioner knows it is not true. This fundamental belief about the role of information and knowledge in determining behaviour is wrong and unscientific. Giving people information does not make them change. In the course of our research, we have conducted a number of sets of focus group discussions with young women and with those who provide services for them for example. They tell us consistently that it is not that they don't know that they and their families should be eating a healthy diet with more fruit and vegetables. What they say is that a host of other things in life get in the way of them doing this.(14, 15)

4 People act rationally

A linked misapprehension is that people act rationally, and that they do what they know to be sensible and logical after critical and rational appraisal of the evidence. Our job as health educators or public health advocates is to provide the evidence. Again this assumes that if you tell people what is good for them and what they need to do to protect their health, they will do it. Well they clearly don't. There has been a long standing effort based on the idea of rational calculating humans designed to change behaviour which is premised on economic utility theory. The idea of economic utility theory is that the driving force of human behaviour is that people seek to maximise their pleasure or their gains and profits and to minimise their pains, losses and costs. The formal theory was called the subjective expected utility model.(16) The standard way of implementing such models in the case of health related behaviour change was to emphasise health threats (losses or pains) and ways of protecting oneself from those threats by changing some habit or other. Since the first models appeared there have been many others built on the same basic utility maximisation principle including the Theory of Planned Behaviour(17), Protection Motivation Theory(18), the Health Action Process Approach(19) and Stages of Change(20). Because these theories chime so well with the individualistic conceptions of human behaviour embedded in Western culture in which self-interested actors "obviously" maximise gains and minimises costs,(21) they have enjoyed great popularity in spite of having achieved very limited success.(6) Even where people are in possession of the information behaviour change can be very difficult. So we know that most smokers want to quit and that many people are permanently dieting in order to lose weight. But most smokers don't quit and successful quitting takes multiple attempts. Most diets fail, not because people don't know what is supposedly good for them, but because knowledge and its rational assessment alone do not drive behaviour.

Changes in smoking, eating as well as alcohol consumption and physical activity are *processes and practices* embedded in social life , not one off events triggered by information or prevented by information deficits. Neither are the processes the consequence of people applying a rational calculus to their own actions. Smoking, eating, drinking and the amount of physical activity people do are ingrained in people's everyday lives and their routines and habits. These things to a very important extent help people define who and what they are: their sense of self is in part derived from these activities. Likewise the identities which others bestow upon then are partly the consequence of these behaviours.(22) The idea that

simply providing people with information to make them see sense and that once they have the facts they will change their sense of who and what they are – i.e. seek to be a different person to the one they are now - is specious in the extreme.

These utility theories also ignore of course the fact that that people sometimes act altruistically, selflessly, out of love, jealousy, fear, compassion, venality or fun. It isn't all about a profit and loss calculus. The problem with this rational calculus approach is that it only deals with one part of the way the human mind functions. Humans are indeed calculating, thinking creatures and use a what psychologists call the reflective system to appraise external stimuli and act accordingly, having cognitively processed the data.(23) But only some of our behaviour works like this.(8) There is also an automatic system which responds to environmental and social cues in a way that requires very little conscious engagement.

The concept of 'nudge' in shaping human behaviour has been significant in popularising the importance of the automatic system. In a series of articles, Theresa Marteau and colleagues have made it very clear that health behaviour is much less rational and driven far less by conscious and cognitive processes than is acknowledged in the notion of the human using only a rational calculus.(24, 25) The proposition of nudge is that much of our behaviour is driven by automatic responses requiring little cognitive engagement, controlled by our state of mind and triggered by features of the environment. The 'nudge' refers to small changes in the physical or social environment that make specific behaviours more likely – placing fresh fruit and vegetables at the front of a food display is an obvious example of a nudge making healthier food choices more likely. Research into unconscious food choices and mindless eating has exposed how many of our decisions about what and how much to eat involve little rational thought.(26) This holds true for other health behaviours and undermines the basic assumption about the value of appealing to people's logic if we wish them to change their behaviour.

5 People act irrationally

However, neither is the converse true. If people don't act rationally all the time, neither are they always irrational. When someone with asthma refuses to stop smoking, we tend to dismiss them as very foolish or addicted or both. But what we tend not to see is that this may not be so irrational a decision after all given their lives and experiences. People have their own reasons for doing things. Behaviours that persist tend to be functional for people. In her seminal work, Hilary Graham found that women who live in very difficult circumstances with tightly constrained resources still find money for cigarettes and when asked why, say that sitting down for a smoke is the one opportunity in the day that they get a chance to do something completely indulgent for themselves.(27) In their context, smoking is therefore not an irrational thing to do. There is a considerable literature which has examined health behaviours from the point of view of the actors involved.(28–31) Whether this is about choice of food, decisions about breast feeding or walking and cycling it shows that one person's rationality is another's irrationality. It is extremely arrogant to assume that people consume alcohol, chocolate, or cream cakes, because that are irrational or are simply behaving thoughtlessly or stupidly. Human actors are profoundly knowledgeable about their

own behaviour, they can account for it in meaningful ways which not only make sense to them, but if we take the trouble to hear those accounts, the rationality within them is clear. (32, 33) So it is important not to dismiss the explanations people give of what they do just because the epidemiological evidence demonstrates that what they do carries a risk. This is well illustrated by the public response to the recent publication by the UK Chief Medical Officers draft guidelines on alcohol consumptions. The current scientific evidence shows that there is no absolutely safe level of alcohol consumption. This is something important for everyone to know. But the level of risk is the critical thing; so what is the risk compared to say smoking or driving a car, sitting in the sun or listening to loud music? The screams from the press and the leader of UKIP that this was yet another encroachment by the nanny state on the rights of individuals to choose how to live their lives, missed the much more fundamental and important point that many people find alcohol intoxication very enjoyable and like it. It gives many of them something very positive in their lives. They derive what they consider to be benefits from alcohol which will include socialising and having fun as well as intoxication. If we wish to bring down alcohol consumption that truism has to be the starting point, not worries about individual choice and fears of the nanny state.

6   It is possible to predict accurately

And lastly, though we have made great strides in identifying key factors which shape behaviour and in what works in changing behaviour, it is still very difficult to say with any certainty how *individual* people will behave in any given situation. In even the most careful of our models, a great deal of variance in *individual* behavioural outcomes remains.(34) Prediction of an individual's behaviour and predicting accurately what changes will flow from a specific stimulus is limited to a small number of highly automatic responses and to relatively short time frames. At a population level, patterns of common behaviours may be observed and the outcome of those behaviours can be seen vividly in for example patterns of health inequalities, tobacco and alcohol consumption and trends in these over time and place.(6, 35) While we can describe these patterns in great detail, however, none of this has provided sharp edged tools with which to tackle health inequalities, the obesity epidemic or the rising tide of alcohol consumption. Knowledge about the relationship, the mechanisms operating between individual actions and societal patterns is thin and therefore offers little on which to base interventions. Important research is presently underway to elucidate mechanisms very much more precisely. (36) But it remains to be seen whether when this becomes available if it will stop policy makers falling back on platitudes about 'getting people to change their behaviour'.

A way forward

So how might we better understand behaviour and behaviour change? We begin to answer this by way of an analogy - the inferences made by the famous fictional Oxford police detective, Inspector Morse. In the books and television series based on them, Morse discovers the perpetrators of murder amidst the colleges and quadrangles of that beautiful city. The genre is familiar and helps to illustrate the central argument of our paper. The fictional stories take us on a journey in the company of Morse and his assistant Lewis, during which we witness the forensic unpicking of the conditions *preceding* the murder. On

the discovery of the corpse Morse works backwards in time to understand the reasons for and the conditions which preceded the death and then to identify the murderer. Morse works by constructing a *series* of narratives about possible suspects and follows in reverse time, several potential causal pathways till he is able to construct a definitive explanatory pathway. What he doesn't do once the corpse is discovered is predict how many more corpses will turn up (although with the apparent propensity for foul play in the fictional version of the city of dreaming spires, perhaps he ought to!).

Let's think for a moment like Inspector Morse and look backwards in time to understand human conduct. Although the behavioural and medical sciences are dominated by predictive causal models, ordinary human reasoning doesn't work like this. Ordinarily humans when seeking to explain why things are the way they are, think like Inspector Morse – they work to understand the immediate preceding conditions and then the conditions which preceded those and so on. So if they are running late for work for example, they might ask themselves why, and the answer might be they missed their train. Then they may ask why did they miss their train and the answer might be that they got up late. They might then ask why did they oversleep and get up late and the answer might be that they were out late the night before and so on and so on. They do not think about prediction other than perhaps to wonder if they are going to get reprimanded by their boss for being late. This forensic or regressive form of inference works in the opposite direction to a predictive model, although is premised on the same underlying idea of events in time.

Scientifically this approach can be illuminating where social and psychological factors are implicated. So it starts with an event (B) – a behaviour - and seeks to understand and articulate the *preceding* conditions which led to that behaviour, rather than starting with the preceding event and predicting the behaviour. It looks at B, (or C. or D or E) and tries to articulate what happened prior to B, C, D, or E. It then seeks to see what happened before that and so on. This regressive inference approach is premised on the notion that things do not happen in a random or chance way; social relations and social practices are patterned. (37) They happen because of preceding events. However there is always some uncertainty about the constellation or figurations of those preceding events and how far one might regress backwards in time. However in the case of much human behaviour and especially the health related behaviours of interest in this paper, through careful observation preceding causal events can be inferred; although only ever imperfectly. In pure form this is entirely inductive, empirical and *a posterori*. This is the type of model which ought to be dominant in the public health where behaviour is involved. It acknowledges complexity and the fact that in the social, political and economic worlds the ability to predict very accurately other than in the most short-term of circumstances is very limited, but that understanding preceding conditions in the form of patterns and practices is usually useful way of thinking about what might be done to change things. This is the corollary of understanding the reasons why people do what they do from their perspective, rather than that of the scientific observer.

To demonstrate the usefulness of this approach in the worlds of medicine and public health, let's consider the question of alcohol consumption. Habitually policy makers and politicians refer to the misuse of alcohol as if the consumption of alcohol was a single behaviour and as if it was possible to find a single solution to the problem of alcohol misuse. With alcohol

there are at least three different public health issues. First the overall levels of alcohol consumption in the population which have been increasing over decades and carry elevated risk for the population of all drinkers because there is no absolutely safe level of alcohol consumption. Second, very high levels of alcohol consumption in a sub set of the population where organ damage is the consequence and where the physical and psychological sequelae of heavy drinking over many years are palpable and will be fatal. Third, the relationship between so called binge drinking especially among young people and the public order and health outcomes. It is the two latter forms of behaviour which are alighted on by apologists for the drinks industry in the form of calls for more education, and to drink responsibly! Leaving aside the question of whether the industry itself might just behave more responsibly, these three different public health issues immediately suggeststhat the origins, the preceding conditions, of the patterns of behaviour, may be different.

To further disassemble this we need (just like Inspector Morse) to describe the preceding conditions of consumption among different groups, communities, age groups, occupations, even families from their perspectives. Alcohol consumption and patterns of behaviour associated with consumption are highly variegated across different social groups. So what happens at a wedding, in a student union bar, in an English country pub on a quiet Tuesday lunchtime, at an Oxford College High Table, at a club for young people on a Saturday evening, on a cruise ship providing holidays for gay and lesbian people, at a middle class dinner party, in a pub where a group of manual workers in middle age are drinking after work, *will all be different*. What is drunk, how much is drunk, what behaviour goes on around the drinking, the degree to which intoxication is encouraged, tolerated, ignored or discouraged are all highly nuanced features of the micro-social structures of each of these settings. All have immediate preceding conditions and all have more distant preceding conditions and of course individual people may inhabit several of these situations on different occasions.

The different patterning of behaviour manifested in these different groups or within their different cultural milieu act as an important point of reference for both the automatic and reflective psychological processes which operate. There will be both automatic and reflective actions within each of these contexts which will explain individual level consumption which will determine alcohol related disease and overall patterns of population consumption. Most humans inhabit multiple social structures and are highly adept at adapting their reflective responses accordingly. They tend to be less adept at controlling their automatic responses and in the case of intoxication less able to do so the more intoxicated they become. It is clearly pointless to try to design interventions to prevent excessive consumption on the basis of some *a priori* social category like social class or age or some overarching universal theory or model. Starting with the behaviour, identifying who is behaving and where, and working backwards using regressive inference is a much more profitable avenue for developing interventions. Interventions to deal with alcohol use must reflect the specifics and understand the preceding conditions of the specifics, like Inspector Morse, rather than try to develop interventions on a single unilinear model of causation based on long range predictions about behaviour change.

Conclusion

All this is to say that predicting behaviour and supporting behaviour change is neither obvious nor common sense. It requires careful, thoughtful work that leads to a deep understanding of the nature of what motivates people and the pressures that act upon them. If we understand these, we are better able to support them to change. In this respect, there have been major advances in recent years. Health psychology has made huge progress in identifying what it takes to change health behaviour.(7) Interventions to alter 'choice architecture' arising from the concept of nudge are an effective solution to altering some population-level behaviours in ways that improve public health. The scrupulous analysis of behaviour change techniques that has produced a behaviour change taxonomy that has advanced our understanding of mechanisms and of supporting change in the behaviour of individuals.(7, 38, 39)

There have also been important developments in sociology and in particular the conception of social practice. This conceptualises behaviour not as something that can be reduced down to things that individuals do and think as if they were isolated from others. It sees the *relations* between individuals and groups and institutions as the starting point and conceptualises things like smoking as a practice consisting of relationships between interacting people but which importantly exists above and beyond the individuals who do it. Smoking (like eating and drinking alcohol consumption) exist across time. New individuals are regularly recruited to the practice which is sustained and supported as new recruits learn how to use the materials, how to relate to the body of other people doing the smoking and what it all means. The practice transits across time and space and only fundamentally changes when the links between parts of the activity get broken and changed – as for example when smoking ceased being primarily defined as glamourous and tough and defined as a health problem and as socially undesirable. All of which happened many decades after the information was available about the lethal consequences of the practice. When the practice changed people changed with it.

The integration of the insights from contemporary psychological theory especially the distinction between the automatic and reflective responses and social practice theory offers perhaps the most exciting new territory for public health interventions. In schematic terms it means disaggregating broad behaviours like eating and drinking, breaking them down in time and place where different expressions of these behaviours occur. It then involves constructing accounts of the typical preceding conditions for those behaviours. The next step is to consider the extent to which automatic and reflective processes are at work. Finally it involves identifying the elements in the practices, the infrastructures, the meanings and the competencies exhibited by the people doing the behaviour and determining where the links between these things might be disconnected – and indeed whether they ought to be disconnected at all!. Thinking then of the mechanisms which might be linked to the disconnection provides guidance on the type of interventions which might be applied. This analytic and self-consciously academic approach turns on its head the idea that it is enough to give people information and tell them what they need to do to produce change in health behaviour. As a consequence, we need to change the way we as health professionals work with the public. In Southampton, we have developed and tested a method of individual

support for patients and clients of health and social care services that steers away from information giving and towards empowering and motivating individuals to generate their own solutions to their problems. This approach is looking promising in its ability to produce sustained changes in the way health and social care staff support behaviour change, and its impact on the lifestyles of different population groups is being tested.(40, 41)

Current public health policy stresses the potential of cumulative, small changes in individual behaviour to produce significant advancements in population health. The Behavioural Insights Team or 'Nudge Unit' advocates for changes in health behaviour through manipulations of small environmental cues. The movement in the NHS to 'make every contact count' recognises the opportunity that practitioners have to improve public health through supporting behaviour change in the millions of people with whom they come into contact.(42) It seems an appropriate moment to harness recent advances in behavioural science in the battle against the rising tide of NCDs threatening to engulf us.

Acknowledgements

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