

Good Questions

Issue 29

May 2009

Are financial incentives the route to encouraging healthy behaviours?

In last month's *British Medical Journal*, leading UK health psychologist Prof Theresa Marteau and colleagues considered the role of [financial incentives to achieve healthy behaviour](#). Disincentives (e.g. tobacco and alcohol taxation) have been used for many years with mixed views on their effectiveness. So, does the converse offer any greater benefits? As we reported in last month's [GQ](#), the Scottish NHS seems to think it may do. Whatever the reality, it is clear that we need to understand more about what motivates people to adopt and maintain healthy new behaviours and what persuades them to quit less healthy behaviours.

How can we better understand human motivation?

by Robert West

About the author

Robert West is Professor of Health Psychology and Director of Tobacco Studies at University College London.

He is a renowned authority on motivation, addiction and smoking cessation. From his empirical work generating more than 250 scientific publications, Prof West has developed his PRIME theory - the first new theory of behaviour change to be developed in more than two decades.

E: robert.west@ucl.ac.uk.

Motivation and behaviour

'Motivation' in its broadest sense involves brain processes that energise and direct behaviour. A better understanding of these processes should improve our ability to explain, predict and influence behaviour. We already understand particular sources of motivation but we lack the 'big picture'. For example, we know about 'biological' drives such as appetite and thirst; we have a good idea how pleasure and pain influence our behaviour, how we analyse costs and benefits to arrive at decisions, and how our behaviour is affected by imitation and adherence to norms, emotions, self-control and 'identity'. The quest for a model that puts all this together was the reason for the development of the PRIME Theory of motivation.

PRIME Theory

PRIME Theory derives its name from the proposed five levels of our motivational system (Plans, Responses, Impulses and inhibitions, Motives and Evaluations) (see Figure 1).

'Responses' (starting, stopping or modifying actions) result from the strongest of competing 'impulses and inhibitions' present at the time: these interact with the prevailing level of physical energy to energise and direct our behaviour. They are generated by stimuli acting on instinctive (unlearnt) and

habit (learnt) mechanisms. Instinct and habit generate 'automatic' behaviours – ones that occur without us being consciously aware of a particular goal. For example, we instinctively flinch in response to pain and we habitually reach for the phone when it rings.

Impulses and inhibitions can also be generated by elements in the next level of motivation: 'motives'. These are 'wants' (involving anticipated pleasure or



Fig 1 Hypothetical structure of the human motivational system. Each of the five levels (Plans, Responses, Impulses and inhibitions, Motives and Evaluations) can only interact with adjoining levels in the diagram.

satisfaction) and 'needs' anticipated relief from discomfort). These are generated by stimuli that bring to mind images of possible events in the future which, because of past experience, carry with them positive or negative feelings.

...continued on page 2

...because good questions outrank easy answers...

In this issue:

Are financial incentives the route to encouraging healthy behaviours?	1
How can we better understand human motivation?	1
Does psychological intervention help in asthma management?	3
In the journals	3
In the news	3
Do all roads lead to Rome? The role of content validity	4
Making the headlines	4
Health awareness – dates for your diary	4
Forthcoming events	4

How can we better understand human motivation?

...continued from page 1

Wants and needs involve feelings. To seek a goal, people have to form an image of it at the relevant moment and feel anticipated pleasure, satisfaction, or relief; these feelings must be stronger than competing wants and needs at that moment. There must also be a route from these wants and needs to the impulses or inhibitions necessary for the behaviour. The fundamental basis of all goal-directed behaviour is therefore quite simple: *we pursue what we most want or need at every given moment.*

Conflicts between wants and needs drive us in different directions, and the concept of 'the moment' is critical to how these play out. Wants and needs come about directly through stimuli interacting with past associations and current drive and emotional states (e.g. hunger, depression etc.) but also through elements in the next level of motivation: 'evaluations'.

Humans uniquely have the capacity to form beliefs about things: propositions that can be communicated through language. This gives us the power to reason and analyse, and benefit from other people's experience. Evaluations are beliefs about what is useful or detrimental, beneficial or harmful, pleasing or displeasing or right or wrong.

According to PRIME Theory, these beliefs can only affect our behaviour if they generate wants or needs. The brain pathways for generating beliefs have evolved after the system for generating motives and have to work through it. This means that *changing people's beliefs can only change behaviour if this makes them feel differently about them.*

'Plans', the final layer of the motivational system, are, like evaluations, uniquely human as they involve our capacity to form mental representations of things that we intend to do in the future. Plans are generated when we want or need to do something but now is not the right time e.g. we are anticipating future needs or there are greater priorities (wants or needs) at the moment.



Plans play a huge role in structuring our lives and enable us to achieve goals without being pulled in different directions by immediate wants and needs. They cannot influence our actions directly; like evaluations, they must generate wants and needs at the relevant times that are sufficiently strong to overcome any competing wants and needs arising from the immediate situation.

Particular kinds of plans, 'rules', concern what we repeatedly do. These rules influence much of our behaviour and particularly to attempts to change our behaviour (e.g. 'I do not smoke', 'I eat healthily'). This depends on their generating wants or needs at the appropriate time, more likely if they are specific and linked to our 'identity' (how we view ourselves). Self-consciously generating wants and needs from evaluations is effortful: it requires and depletes mental energy.

These levels of motivation should map onto structures and mechanisms within the central nervous system: time and future research will tell whether its predictions at the biological level of analysis are borne out.

"At each moment in our lives we usually act in pursuit of what we most want or need at that particular moment"

Further reading

Marteau T et al (2009) Using financial incentives to achieve healthy behaviour. *BMJ*, 338:b1415.


West R (2006) *Theory of Addiction*. Oxford: Blackwells.

West R (2005) Time for a change: putting the Transtheoretical (Stages of Change) Model to rest. *Addiction*, 100, 1036-1039.

Does psychological intervention help in asthma management?

Dr Mike Thomas, Chief Medical Advisor to Asthma UK will be answering this question at the launch of a new event: [LIFEPSYCHOL 2009](#). This two-day event (7-8 July, Birmingham) highlights the importance of psychosocial support for people with long term and life threatening conditions. Amongst the strong line up of speakers is Dr Kirsty Winkley, NIHR Diabetes Programme Manager & Lecturer in Diabetes and Psychology, King's College London & Institute of Psychiatry, who is tasked with highlighting the benefits of psychosocial strategies in diabetes management. To find out more, visit www.lifepsychol.com.

lifepsychol™₂₀₀₉

	<h3>In the Journals</h3>
<h4>How do medical students value health?</h4>	
<h3>1</h3>	<p>Medical students gain a specific perspective on health problems during their medical education. 161 students were asked to value 10 hypothetical health states (derived from the EQ-5D) which were compared to those of the general population.</p>
<h3>2</h3>	<p>EQ-5D includes 5 dimensions of health (mobility, self-care, usual activity, pain, anxiety/depression) and a visual analogue scale for rating overall health.</p>
<h3>3</h3>	<p>Significant differences were found for 3 of the 10 health states including one mild, one moderate and one severe health state, with students valuing each higher than the general population.</p>
<h3>4</h3>	<p>Differences may be attributable to experiences and medical knowledge but socioeconomic background or level of education may confound these results.</p>
<h3>5</h3>	<p>Medical professionals need to be aware that their assessment of a particular health state can differ from those of their patients. Thus, clinician assessment is no substitute for patient-reported outcomes.</p>
<p>Barbist et al (2008) How do medical students value health on the EQ-5D? Evaluation of hypothetical health states compared to the general population. <i>HQLO</i> 6/1/111.</p>	

In the news

■ [Botox could treat depression](#)

Research presented recently at the British Psychological Society's Annual Conference indicates that by stopping the face from frowning, Botox makes people feel happier. It is believed that our expressions affect our mood, so the wrinkling of the brow when annoyed reinforces our irritation. By blocking frowning, Botox prevents expressions of negative emotion, resulting in a happier mood. While other treatments for depression have significant negative side effects, the main side effect of Botox would be a younger looking face. However, as the cosmetic effects are temporary, so would be the emotional effects.

■ [Danish are the most empowered patients in Europe](#)

While Denmark fills the top spot, the UK trails in 17th place. The highest ranking healthcare systems, including Germany, Finland and Switzerland, work in various ways to involve patients by offering financial incentives, power over information and patient rights, leading to them making active choices. Specifically, say the researchers, if patients in the UK are to be active partners in their own healthcare, they need better health literacy and access to comprehensive information about their medicines. Furthermore, this needs to be from a wider range of sources than just their doctor or pharmacist.

Do all roads lead to Rome? The role of content validity



Commissioned by the Editorial Board of *Diabetic Medicine*, our review of quality of life (QoL) measurement in diabetes¹ highlights growing concerns for the appropriate selection of psychological (or patient-reported outcome) measures in diabetes research. Our aim was to clarify terminology, critique commonly used (and misused) measures and make recommendations for how to select measures appropriately. Of course, these concerns are not peculiar to diabetes research and similar issues have been raised elsewhere².

Content validity

Psychological constructs (e.g. well-being, QoL, satisfaction) are latent variables. This means that they cannot be measured directly and objectively, e.g. in the way that blood pressure can be assessed. We need to use self-report measures and ensure that the given construct (concept) is measured as accurately as possible. Content validity is concerned with the adequacy of the instrument to measure what it purports (or what the researcher claims it) to measure.

While outcomes such as well-being may be related to QoL (often showing moderate correlations with each other), they do not measure the same underlying variable. Thus, we need to be explicit not only in our selection of measures (to ensure they are capable of answering our research questions) but also in their interpretation. Measures of well-being, health status and satisfaction have all been referred to in the literature as measuring QoL and several noteworthy studies have been criticised for

misinterpreting PRO data. No single measure can suit every purpose and when PRO measures are selected inappropriately and data misinterpreted, conclusions are fundamentally flawed. However, with careful appreciation of the importance of content validity, PRO measures can enable robust and holistic assessment of outcomes that are important to all stakeholders.

1. Speight J et al (2009) Not all roads lead to Rome – a review of quality of life measurement in adults with diabetes. *Diabetic Medicine*, 26, 315-327.
2. Rothman M (2008) Evaluating and documenting support for existing instruments for labeling claims: content validity. Presented at *ISPOR*, Toronto, 6-8 May.

Making the headlines

- [NHS Evidence launched](#)
- [Neighbourhood food options linked to obesity in New York](#)
- [Cancer risk "not changing habits"](#)
- [EC will look at which pictures work best to help smokers quit](#)
- [Good baby fat keeps adults slim](#)
- [London unveils diabetes strategy](#)
- [Tax on sweet drinks might fight obesity](#)
- [Fears over web health revolution](#)

Health Awareness - dates for your diary

[World Asthma Day – 5](#)

[International Nurses Day – 12](#)

[Coeliac Awareness Week – 11-17](#)

[Xtraordinary People Week – 18-23](#)

[Save a Baby Month](#)

[National Smile Month](#)



Forthcoming events

16-20 May 2009

ISPOR 14th Annual
International Meeting
Orlando, Florida, USA

7-8 July 2009

LifePsychol 2009
Birmingham, UK

17-19 Aug 2009

Measurement, Design and
Analysis Methods for Health
Outcomes Research
Harvard School of Public
Health, Boston, USA

9-11 Sept 2009

BPS Division of Health
Psychology
Aston University, UK

23-26 Sept 2009

European Health
Psychology Society
Pisa, Italy