

Climate change – warming to the task

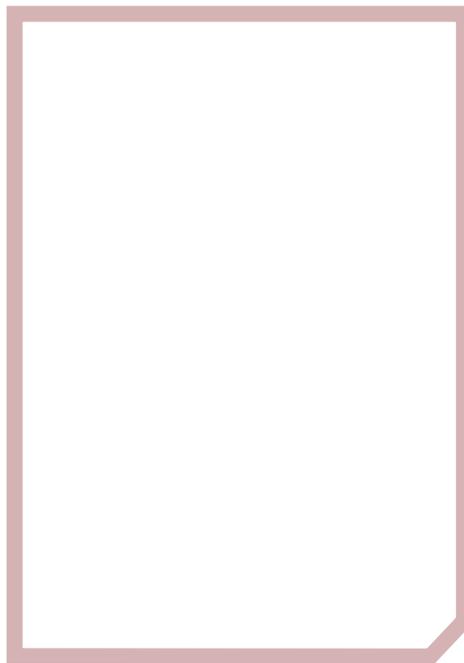
Matthew C. Davis and Rose Challenger argue that it's time for psychology to lead the way in greening individuals' behaviours, especially in the workplace

Climate change is generally accepted as the largest single issue facing humankind in the 21st century. So why is it then that we, as psychologists, appear to be so quiet on the topic? We believe it's time that psychology stepped up to the challenge and helped make a difference.

In the UK, attention has focused predominantly on encouraging individuals to 'green' their behaviours at home, in order to help achieve long-term reductions in carbon emissions. The key behaviours targeted through policy interventions and research have tended to focus upon reducing home energy use, increasing recycling and reducing waste, in addition to promoting more environmentally friendly forms of transport and curtailing car use.

Important as targeting green behaviour in the home may be, what about the workplace? Our own research (in partnership with Arup, the international engineering and consulting firm) has identified a distinct gap in both research and practice when it comes to reducing the environmental impact of people at work. Of the 165 articles deemed relevant (i.e. directed at achieving behavioural change) and examined in detail for our review (8595 articles were returned in total from our multiple database search), the vast majority looked at green behaviours in the home – the workplace was almost entirely overlooked. Of those dealing

with the workplace, the majority concerned waste reduction only, were often basic, failed to consider the impact of other organisational and human factors on intervention success, and were mostly lacking in scientific rigour or theoretical underpinning. Our views have been broadly confirmed in a number of



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interviews conducted with leading academics and industrial experts, who also felt that the area is currently under-explored and that there is a real need for psychologists to publish more research in the area. Additionally, an extensive literature review of interventions aimed at reducing energy use (Abrahamse et al., 2005), found the emphasis of published material was heavily weighted towards the domestic sector.

So, why is it important for us to champion green behaviour at work? And what can we, as psychologists, do to lessen the workplace's contribution to climate change?

According to recent government statistics, the impact of the non-domestic sector (e.g. services, public sector and industry) is significantly higher than that of residential users. For instance, the UK's industry and service sectors contribute 32.5 million tonnes of carbon (MtC) to the atmosphere – over twice that of domestic users (13.5 MtC) – through power station electricity consumption (DTI, 2006); and it is estimated that industry and commerce account for almost three times as much of the UK's annual waste as households (DEFRA, 2006).

Whilst companies themselves appear to recognise the key role they play in combating climate change – for example, corporate sustainability policies are increasingly common, as are other steps such as segregated waste bins and company travel schemes – we feel the role of employee behaviour is still neglected. Consideration as to how best to encourage individuals to fully cooperate with, and engage in, such changes (overcoming inhibitory factors such as past behaviours and habits) seems to be lagging behind.

This is where we believe psychology can make the difference. As touched on in the previous article by Spence and colleagues (see p.108), environmental and social psychologists have had success in bringing about behavioural change in the home environment. Interventions drawn from well-established psychological theories, such as the theory of planned

references

Abrahamse, W., Steg, L., Vlek, C. & Rothengatter, T. (2005). A review of intervention studies aimed at household energy conservation. *Journal of Environmental Psychology*, 25(3), 273–291.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179–211.

Clegg, C.W. & Walsh, S. (2004). Change

management: Time for a change! *European Journal of Work and Organizational Psychology*, 13(2), 217–239.

Darby, S. (2006). *A review for DEFRA of the literature on metering, billing and direct displays*. Oxford: Environmental Change Institute, University of Oxford.

DEFRA (2006). *Key facts about: Waste and recycling – Estimated total annual waste arisings, by sector*. Retrieved 11

April 2008 from www.defra.gov.uk/environment/statistics/waste/kt/wr/02.htm

Department of Trade and Industry (2006). *A supplement to the third annual report on the Energy White Paper "Our energy future – Creating a low carbon economy"*. London: Author.

Jenner, E.A., Fletcher, B.C., Watson, P. et al. (2006). Discrepancy between self-reported and observed hand hygiene

behaviour in healthcare professionals. *Journal of Hospital Infection*, 63(4), 418–422.

Larson, M.E., Houlihan, D. & Goernert, P.N. (1995). Brief report: Effects of informational feedback on aluminum can recycling. *Behavioral Interventions*, 10(2), 111–117.

Lingard, H., Gilbert, G. & Graham, P. (2001). Improving solid waste reduction and recycling performance

behaviour (Ajzen, 1991), goal setting theory (Locke & Latham, 1980), social identity theory (Tajfel, 1978) and more general behaviourism (e.g. Skinner, 1965), have helped bring about reductions in home energy use and waste, as well as increasing recycling rates.

The most noticeable successes in this area have involved the use of feedback in interventions aimed at reducing energy consumption in the home.

Indeed, research has demonstrated the success of feedback interventions to such an extent that the ideas have spread beyond academia and into practical use. DEFRA have drawn up best practice advice from such studies (e.g. Darby, 2006). UK energy suppliers (e.g. E.ON) have made monitoring/feedback devices widely available and similar commercially produced gadgets are now selling as desirable consumer products (e.g. the Wattson gadget). These feedback gadgets can be placed anywhere in the home to display real-time electrical usage and cost for a household.

Despite this, however, it is difficult to find interventions that utilise feedback in the work context. There are isolated examples, such as the successful intervention in an industrial plant aimed at reducing energy consumption (Sierro et al., 1996) or the study demonstrating feedback boosting recycling rates in an education setting (Larson et al., 1995), but we have hardly scratched the surface as to the potential for this technique in the organisational environment in general.

We would argue that occupational psychology is well placed to take the lead in this area. We believe that by reframing the green issue as a more traditional organisational problem – just as any other change to the workplace may be – we can make what is quite a nebulous issue into a much more manageable and, hence, achievable one. This can be realised through integrating environmental psychology principles with our existing

skills and expertise, gained in areas such as organisational change and change management, user involvement and compliance.

We believe it is important to focus on changing behaviour in the first instance to bring about rapid, and sustained, behaviour change. The compliance literature demonstrates the need to focus on changing actual behaviours, not just

attitudes; for example the reported low concordance rates between positive attitudes towards hand washing and actual hygiene behaviours in healthcare workers (e.g. Jenner et al., 2006).

The work environment provides the ideal arena to support actual behavioural change, with its pre-existing organisational structures and processes. Opportunities abound to exploit these existing mechanisms; for example, incorporating new forms of feedback, modifying workers' roles and responsibilities, or providing rewards for desired behaviours. We could also involve users throughout the interventions, capitalising on their first-hand knowledge of how to reduce waste and inefficiencies in the organisational systems (see the example of lean engineering, below). At the same time it is important to help organisational culture progress, ensuring that interventions do not stop at small-scale, individual changes, such as turning off computer monitors, but extend through to large-scale action, such as organisational purchasing decisions. As occupational psychologists, we already have the skill set to do this.

For instance, our extensive experience in the success and failures of change management programmes, particularly technology-led interventions, tells us that user involvement – whereby end users pull the project through to successful completion by taking ownership of and having input into the process – is key (e.g. Clegg & Walsh, 2004). Our discussions with building engineers and facilities

managers have demonstrated that technological changes (e.g. automated lighting and ventilation systems) on their own are not successful, as users often try to regain control (e.g. through overriding the system or opening windows), to the overall detriment of the performance of the technology (e.g. Wener & Carmalt, 2006). Providing users with an aspect of control is therefore crucial.

As occupational psychologists, we are already heavily involved in designing and facilitating change-management processes, (e.g. running focus groups and worker forums). These same processes should be applied to environmental change, to ensure that a change to greener working practices is not driven solely by management, but is championed and supported – and therefore carried out – by the workers themselves.

Along similar lines, we can help to apply the principles of lean engineering, developed from Womack and Jones's (1989) description of the Toyota manufacturing process. Lean engineering is a business model that concerns the reduction of waste in the organisational system – by, for instance, reducing waiting time, over-production and over-processing, increasing manufacturing velocity and flexibility, and eliminating defects – whilst aiming to deliver quality products at minimum costs. In a novel study, Rothenberg (2003) recorded the effectiveness of applying principles of lean engineering on waste reduction in a manufacturing plant. The management promoted worker involvement and interaction between production-level staff and specialists to identify potential areas for environmental improvement. A number of successful environmental initiatives were generated, and it was noted that shopfloor worker involvement was important for contextual knowledge and effective implementation.

With this in mind, we suggest that psychologists should facilitate organisations to empower frontline workers to take the lead on green issues, helping to reduce inefficiencies at source and subsequently improve compliance

“As occupational psychologists, we already have the skill set”

using goal setting and feedback. *Construction Management and Economics*, 19(8), 809–817.

Locke, E.A. & Latham, G.P. (1980). *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice-Hall.

Neal, A. & Griffin, M.A. (2006). A longitudinal study of the relationships among, safety climate, safety behavior, and accidents at the individual and group levels. *Journal of*

Applied Psychology, 91, 946–953.

Parker, S.K. & Wall, T.D. (2001). Work design: Learning from the past and mapping a new terrain. In N. Anderson, D.S. Ones, H.K. Sinangil & C. Wiswesvaran (Eds.) *Handbook of industrial, work and organizational psychology: Vol. 1* (pp.90–109). Chichester: Wiley.

Rothenberg, S. (2003) Knowledge content and worker participation in

environmental management at NUMMI. *Journal of Management Studies*, 40, 1783–1802.

Sierro, F.W., Bakker, A.B., Dekker, G.B. & Vandenburg, M.T.C. (1996). Changing organizational energy consumption behaviour through comparative feedback. *Journal of Environmental Psychology*, 16, 235–246.

Skinner, B.F. (1965). *Science and human behavior*. New York: Free Press.

Tajfel, H.E. (1978). *Differentiation between social groups: Studies in the social psychology of intergroup relations*. London: Academic Press.

Wener, R. & Carmalt, H. (2006). Environmental psychology and sustainability in high-rise structures. *Technology in Society*, 28(1–2), 157–167.

Womack, J.P. & Jones, D.T. (1989). *Lean thinking*. London: Free Press.

with green initiatives. Workers should be given increased responsibility for identifying key areas where behaviours need to be targeted along with the opportunity to help develop and implement interventions. It has been shown consistently in the work-design literature that workers generally respond positively to measures increasing empowerment when introduced in a sensitive and integrated manner (e.g. Parker & Wall, 2001).

We should draw on our expertise in the field of work design to help adapt workers' roles and responsibilities accordingly, whilst encouraging two-way communication from management to sustain these new ways of working. The potential benefit of adapting workers' roles and workplace procedures has been highlighted in a construction industry waste-reduction intervention (Lingard et al., 2001), although methodological flaws mean the conclusions that can be drawn are tentative. We can also help to change the organisational culture more generally, in an attempt to embed the desired green behaviours across the whole organisation, thereby improving the chance of successful long-term change. Organisational climate has proved influential in determining the health and safety behaviour of workers (e.g. Neal & Griffin, 2006); similarly, we believe culture will also help to shape individuals' environmental behaviours.

So how do we move forward?

The non-domestic sector accounts for a significantly greater proportion of the UK's energy and waste than the domestic – it's now time to pay the workplace the attention it deserves. We have demonstrated some of the contributions that occupational psychology may be able to make already, but there is the potential for a much larger contribution from our profession as a whole. We should be seeking to capitalise on our knowledge of successful behavioural change, drawing on techniques that bring about rapid and sustained changes in actual behaviour – whether these come from occupational, clinical, environmental or elsewhere. Ultimately the aim should be to develop interventions as quickly as possible, as the threat of climate change can only get bigger over time.



Forums could enable workers to voice observations concerning wasteful areas within an organisation

We believe that occupational psychologists should make the most of their existing talents and champion the green agenda in organisations. We need to start to think of greening behaviours at work as less of an environmental issue and more as an organisational change that we need to examine and tackle as we would with any other organisational problem a client presents with. It is our hope that the successful examples we have highlighted from occupational psychology will be the catalyst to prompt other practitioners to act on this problem. Not only would this really drive the rapid behavioural changes that are needed to help combat climate change, but also develop a profitable – and highly worthwhile – business area.

In practical terms, there are many simple steps that organisations and their employees can quickly take to begin this move towards greener behaviour. For instance, drawing upon the notions of user involvement and lean engineering, forums could be established. For minimal expense these forums could enable workers to voice their observations concerning wasteful areas and processes within an organisation and to share their suggestions for encouraging more environmentally friendly ways of working. Another technique could be to give key individuals

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additional responsibilities related to achieving the desired green behaviours, with incentives offered and rewards provided when the behaviours desired are expressed.

Steps such as these would not only help to reduce inefficiencies in an organisation, but would also improve communication with management, provide workers the opportunity for involvement throughout the change process and increase the likelihood of success. For any change in working practices to be successful, it's important for managers to champion and lead the way. Strong leadership will be especially important in helping to integrate environmental issues into existing organisational processes and reinforce the importance of changing the way people behave. One way for management to communicate the importance they attach to the issue is by amending staff performance appraisals, with workers evaluated against a set of desired behaviours. These initiatives could be introduced at low cost and relative speed, helping to identify where changes can best be made, reinforcing and rewarding green behaviour.

In summary, we believe psychology is missing a trick by not capitalising on the wealth of knowledge and techniques within subdisciplines to help confront climate change. As psychologists, we are already successfully changing people's behaviours at home, in schools, in hospitals and at work – it's time that we started thinking about how to apply the techniques we already use to help tackle the issue of climate change. As experts in understanding both behaviour and behavioural change, we should be at the forefront of greening behaviour. We invite anyone currently involved in the green agenda within organisations to speak out and let others know about their work; we are aware that a small number of practitioners are active in the area, but if research is not published, we stand little chance of convincing organisations of the benefits we can bring as a profession. The issue is here and now – let's step up and make a difference!



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