

Investigating the effects of technological remedies on high energy use

Laura Cowen & Birgitta Gatersleben

University of Surrey, Guildford, UK

Introduction

We take for granted the availability of electricity, water, and car fuel. Yet we have all experienced, or heard of, blackouts, water shortages, or fuel shortages. Whether the causes are natural disasters, over-exploitation of resources, political activity, or just domestic financial problems, how can we reduce our reliance on such resources?

An attractive solution is to invent more efficient technologies that enable us to maintain our current lifestyles.

A recent review of economic evidence concludes, however, that technological progress can actually 'rebound' and cause us to use more energy (Jenkins, Nordhaus, & Shellenberger, 2011). Jenkins et al (2011) conclude that technological efficiency is key to economic growth and suggests ways to mitigate the rebound effect.

There is little research, however, into understanding the psychological processes that underlie this rebound effect in people's energy use.

In consumer psychology research, a similar effect has been found for health and other behaviours. Bolton, Cohen, & Bloom (2006), Bolton, Reed II, Volpp, & Armstrong (2008), and Bhattacharjee, Bolton, & Reed II (2009) observed that when risk perception is reduced in an individual who is attracted to eating high-fat foods, heavy smoking, or high credit card usage, the individual is more likely to behave in the risky way. The researchers reduced the participants' risk perceptions simply by presenting them with advertisements for remedies that are actually marketed with the intention of helping people *reduce* their high-risk behaviour (diet pills, nicotine-replacement products, or consolidation loans respectively). Lowered

self-efficacy was also observed to contribute towards the rebound effect when participants were presented with advertisements for diet pills to aid weight loss.

Would presenting technological aids to reduce high energy usage invoke similar psychological processes (and the rebound effect) in individuals who typically use large amounts of energy?

Method

This initial investigative study uses online questionnaires to measure pro-environmental behavioural intentions of respondents recruited using a snowball sampling technique on social networking sites.

Results and discussion

The results of this research will be discussed in terms of their implications for the design of 'smart homes' where energy use is automatically managed by technology.

References

- Bhattacharjee, A., Bolton, L. E., & Reed II, A. (2009). License to Lapse: The Effects of Weight Management Product Marketing on a Healthy Lifestyle. *Management*. Retrieved from http://opim.wharton.upenn.edu/risk/library/WP20090506_AM,LB,AR.pdf.
- Bolton, L. E., Cohen, J. B., & Bloom, P. N. (2006). Does marketing products as remedies create "Get Out of Jail Free Cards"? *Journal of Consumer Research*, 33(June), 71-81.
- Bolton, L. E., Reed II, A., Volpp, K. G., & Armstrong, K. (2008). How Does Drug and Supplement Marketing Affect a Healthy Lifestyle? *Journal of Consumer Research*, 34(5), 713-726. doi: 10.1086/521906.
- Jenkins, J., Nordhaus, T., & Shellenberger, M. (2011). *Energy emergence: Rebound & backfire as emergent phenomena*. Retrieved from http://thebreakthrough.org/blog/Energy_Emergence.pdf.