

Energy Cultures

An interdisciplinary approach to
understanding and influencing
energy behaviours

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New Zealand



New Zealand??



Origin of the Energy Cultures approach

Our initial research goal:

Better understanding of household energy behaviour and behaviour change

Problem: making interdisciplinarity work!

Solution: the **Energy Cultures Framework**

The Energy Cultures team today

Dr Janet Stephenson Prof. Rob Lawson

**sociology/
human geography**

**consumer
psychology**

Prof. Barry Barton
law & policy

Dr Paul
Thorsnes
economics



Debbie Hopkins
**environmental
sociology**



Michelle Scott
psychology, HCI

Prof. Gerry
Carrington
**physics/
engineering**



Dr John
Williams
marketing



Dr Sara
Walton
management



Dr Rebecca
Ford
engineering



Dr Adam Doering
**social science;
transport**



Dr David Rees
**system
dynamics**



Dr Charles Sullivan
**psychology;
transport statistics**

Question!



MCHUMOR.com by T. McCracken



*How does your household
keep warm in winter?*

“My New Year’s resolution? To no longer suffer in silence. I will moan, whimper, and complain until you resolve to get the heater fixed.”

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ELEMENTS OF THE ENERGY CULTURES CONCEPT

“Material culture”

Insulation

House structure

Heating devices

Material
culture

Energy sources

“Energy practices”

Energy
practices

Turning on heater

Drawing curtains

Putting on jersey

Maintaining heating
technologies

“Norms”

Expected
comfort levels



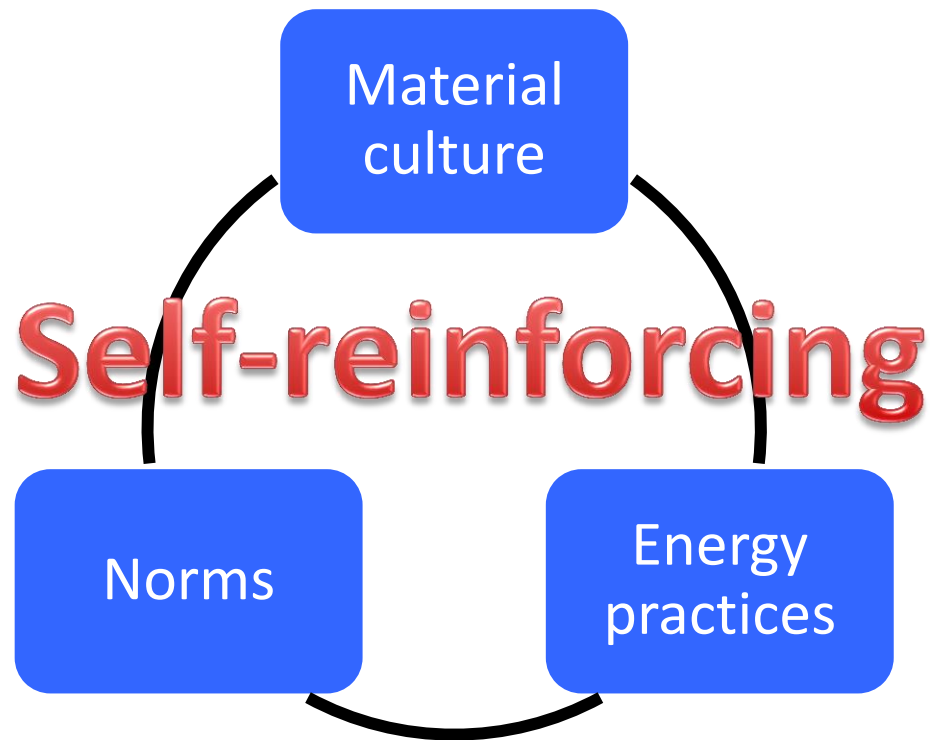
Norms

Maintaining
traditions

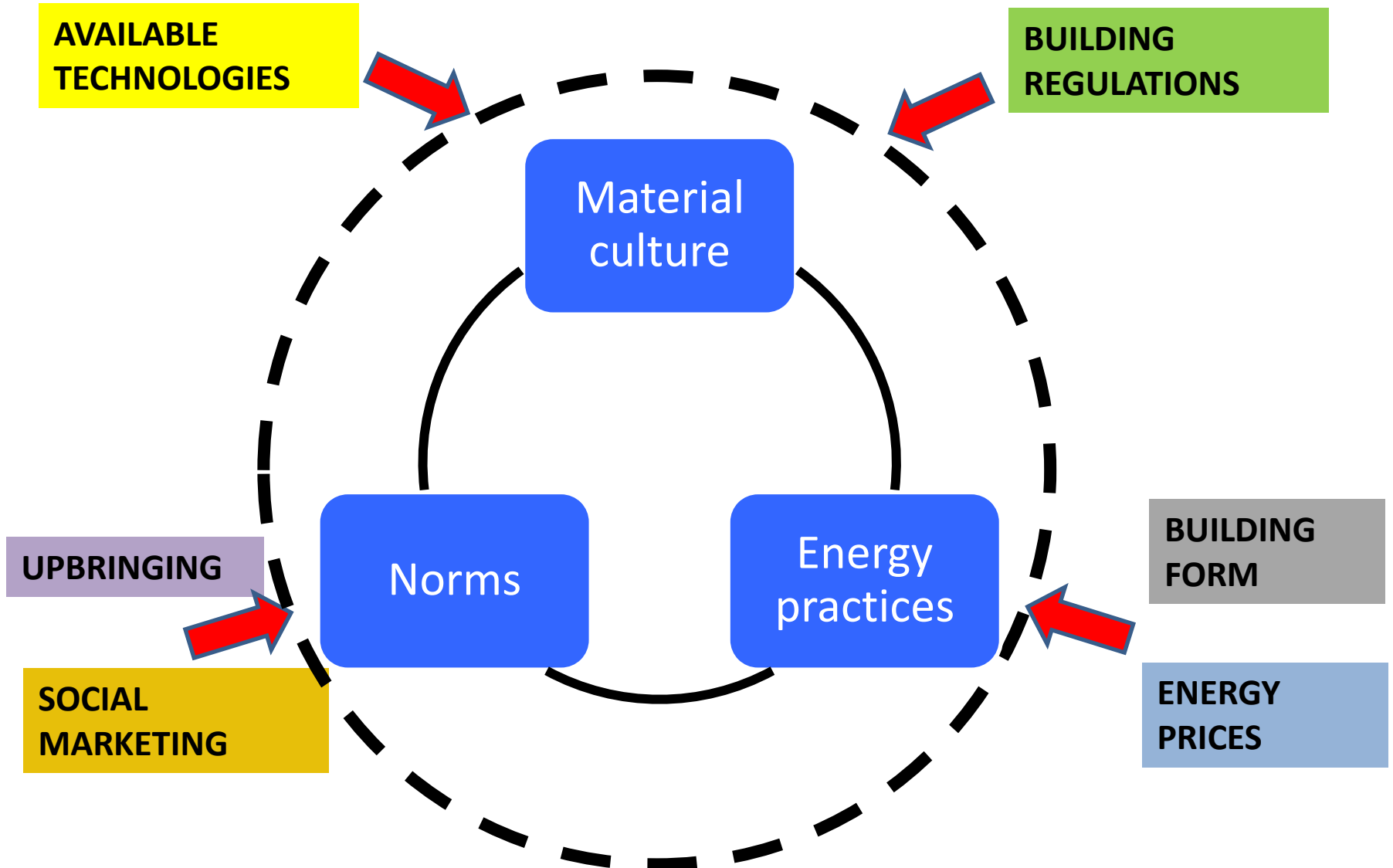
Social
expectations

Environmental
concern

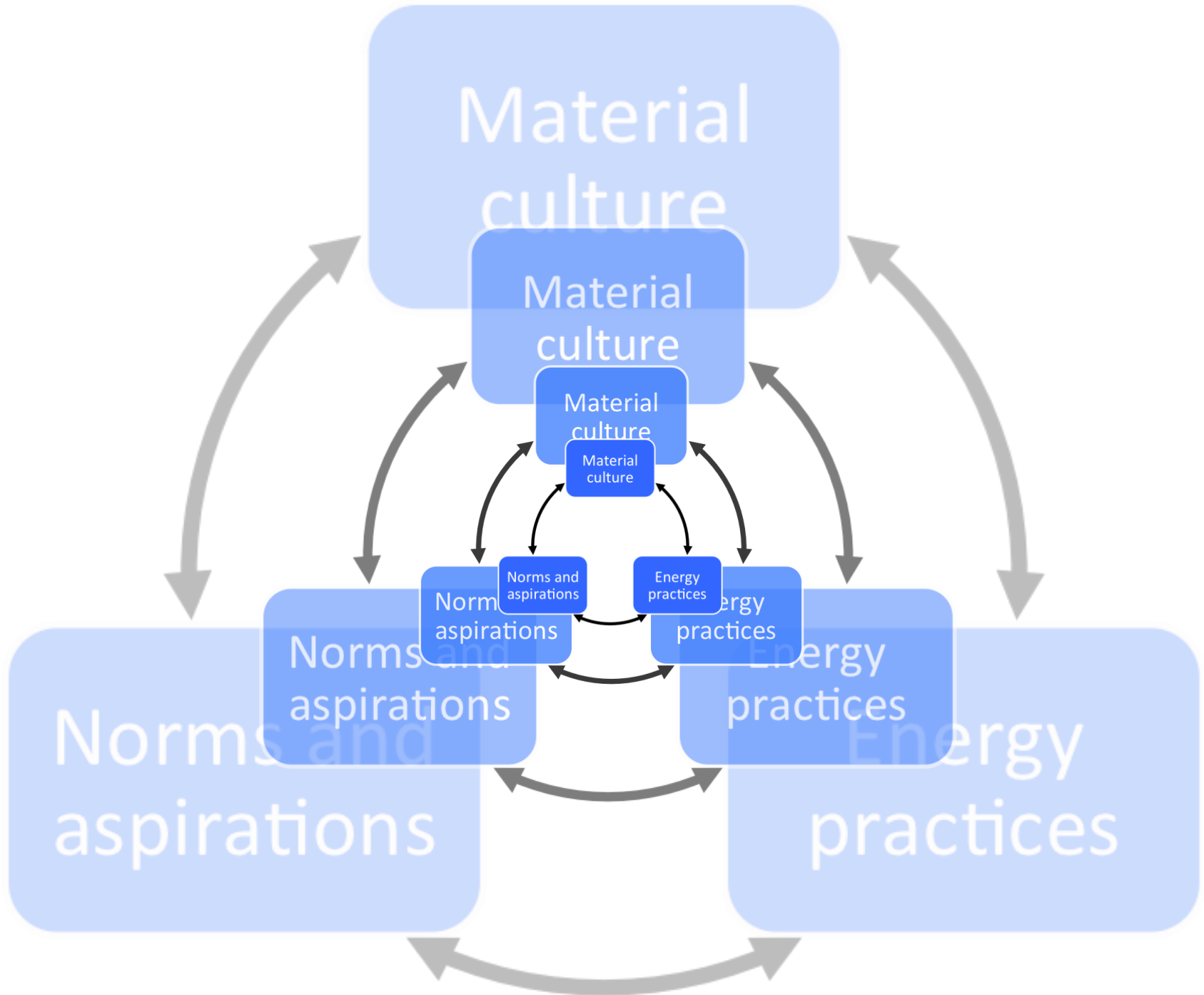
Energy Cultures Framework



External influences can create lock-in



ENERGY CULTURES AT MANY SCALES



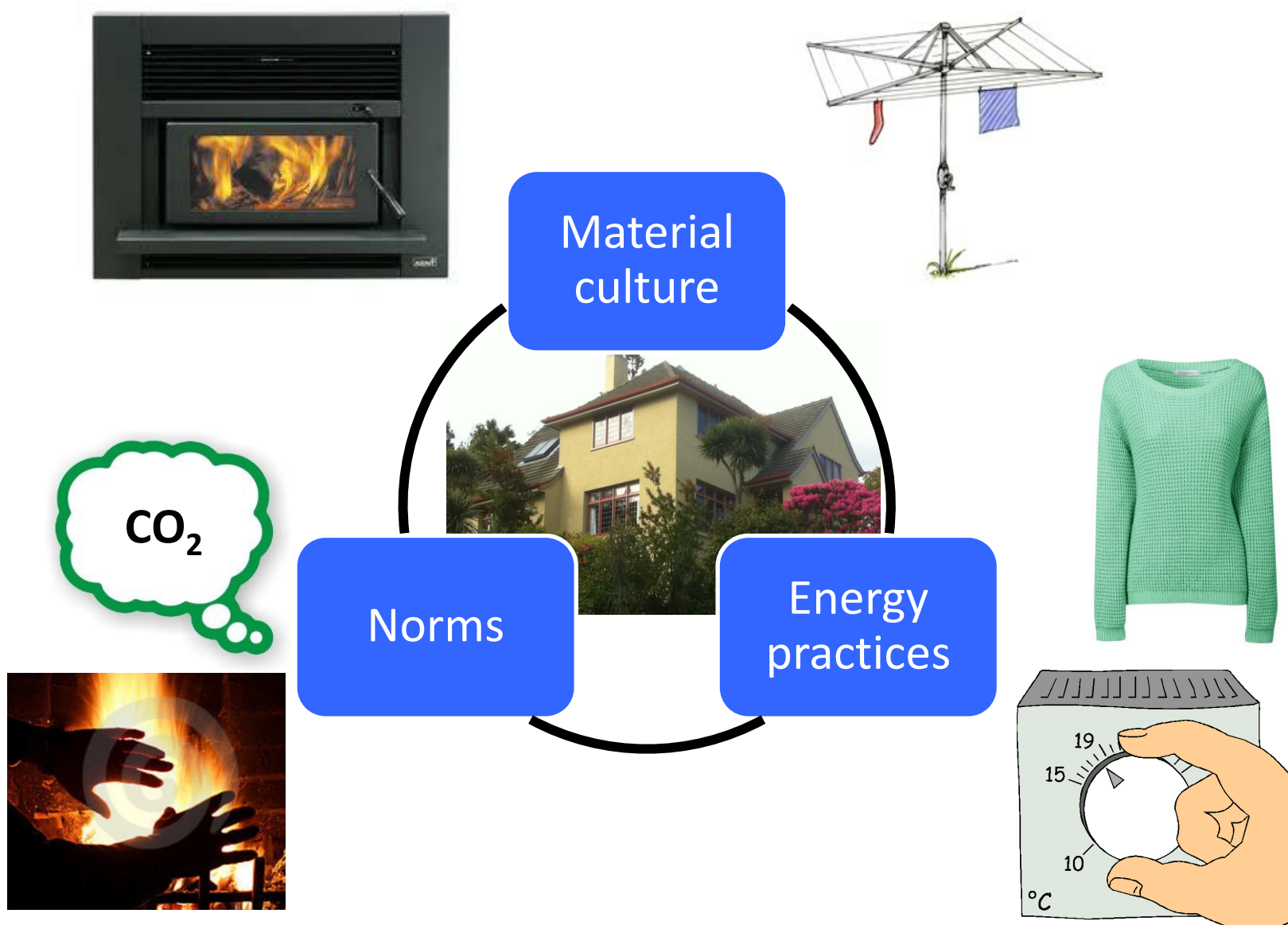
Energy culture at activity scale



Energy culture at activity scale



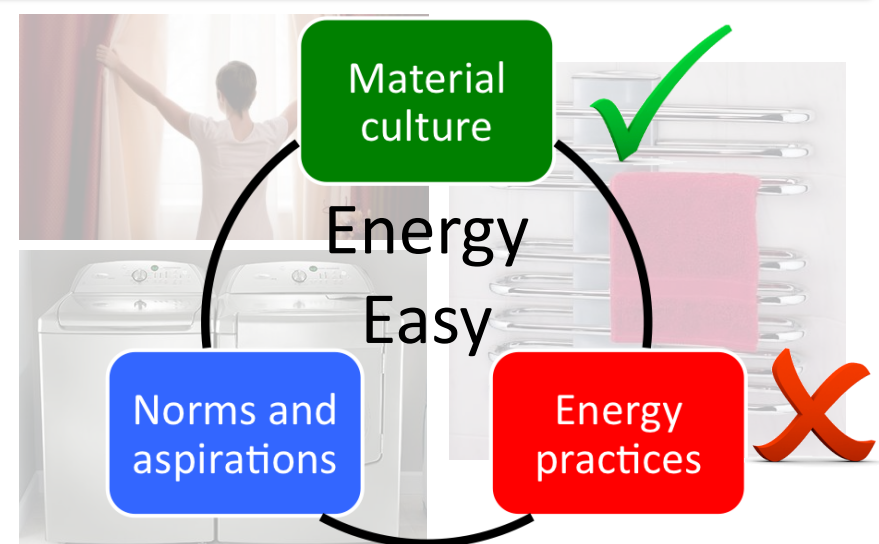
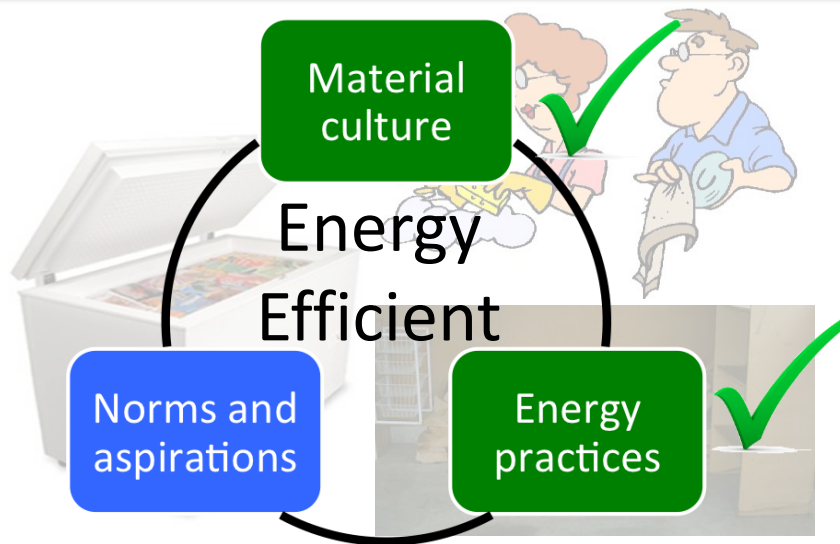
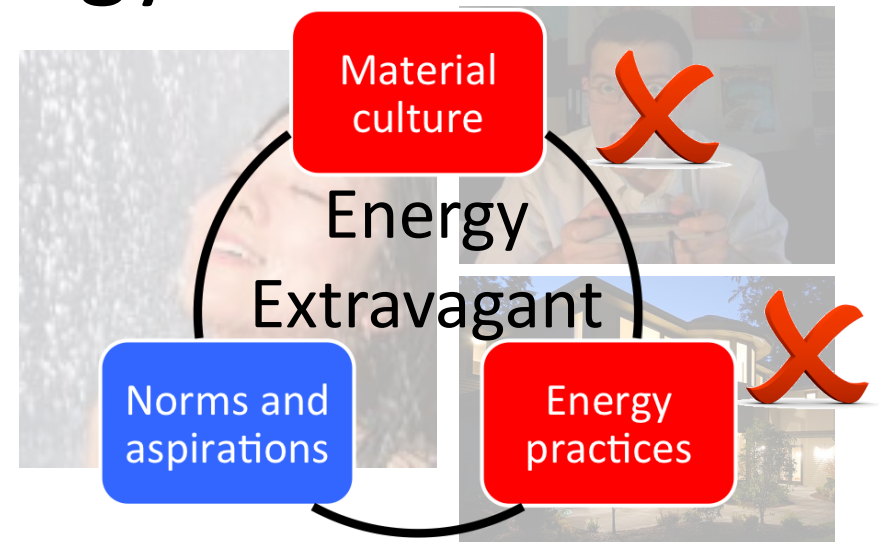
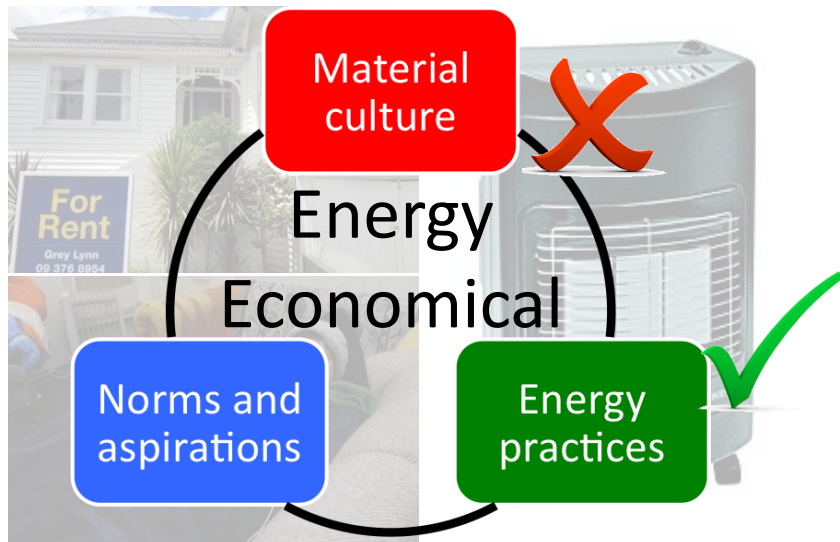
Energy culture at a household scale



Distinctive clusters of household energy cultures



Distinctive clusters of household energy cultures



New Zealand's energy culture: material culture



NZ's energy culture: norms



FREE UNDERWEAR

When you spend
\$150 RRP on Icebreaker*

***Terms and Conditions:**

- ▶ Offer valid on any purchase of Icebreaker product valued at \$150 or more
- ▶ One free pair of Men's Anatomica Boxer or Women's Hipkini per purchase
- ▶ Offer not to be used in conjunction with any other offer or discount
- ▶ Offer only while stocks last
- ▶ Offer ends April 22, 2012

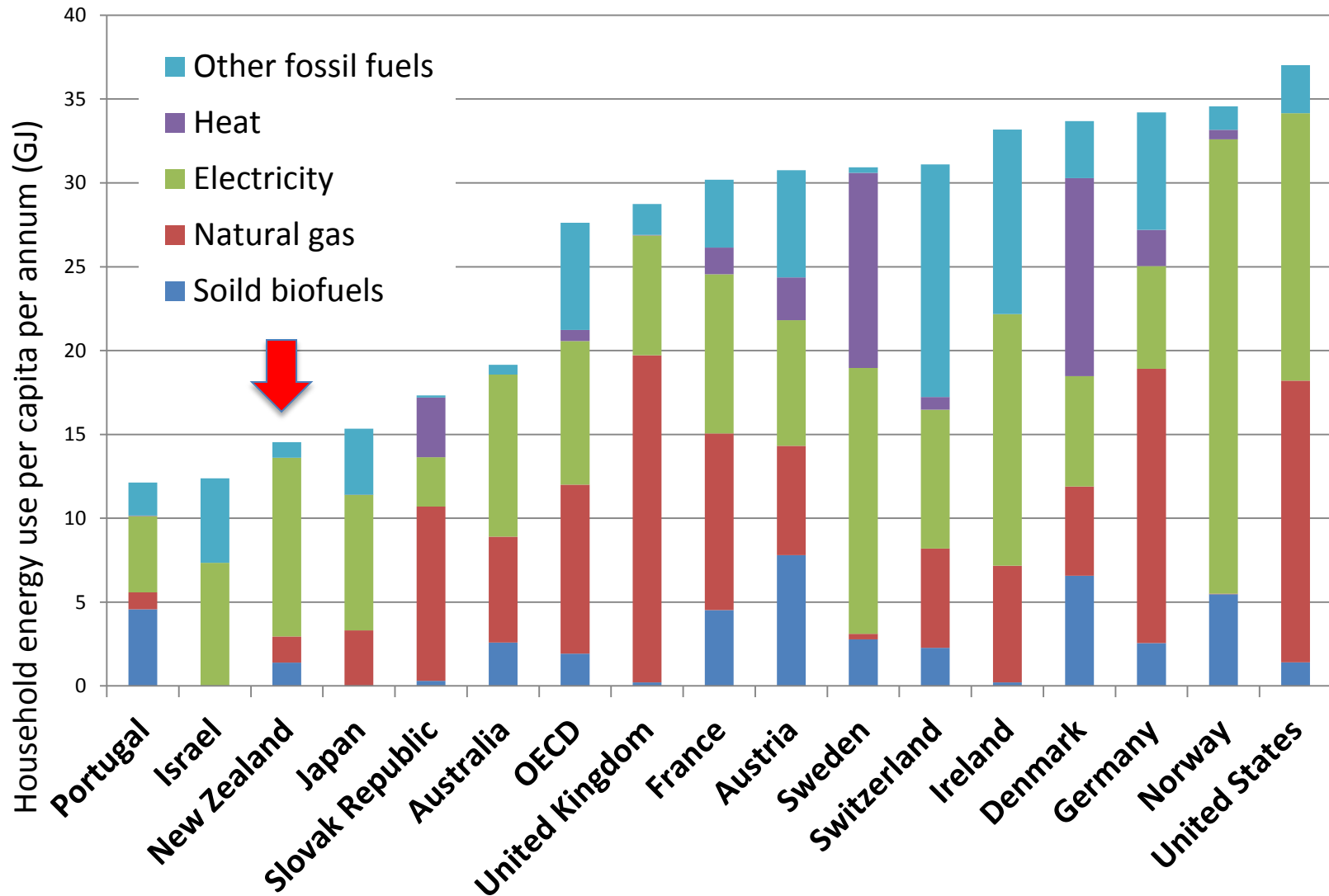
icebreaker NEW ZEALAND MERINO



“Wool
with sex
appeal”

NEW YORK TIMES

NZ's energy culture: practices



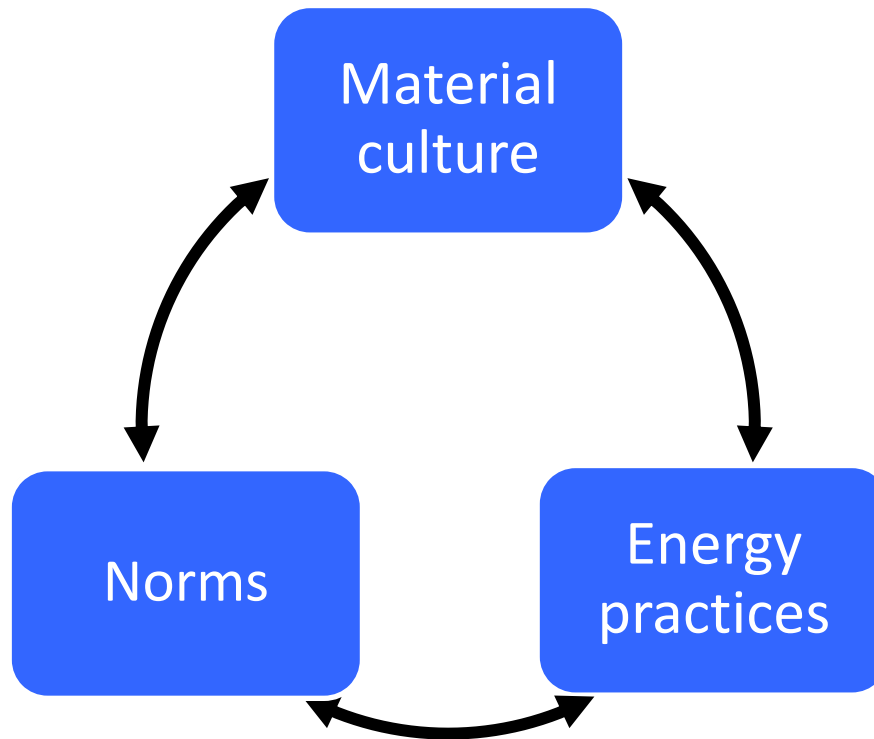
ENERGY CULTURES AS A FRAMEWORK FOR BEHAVIOUR CHANGE

Question!

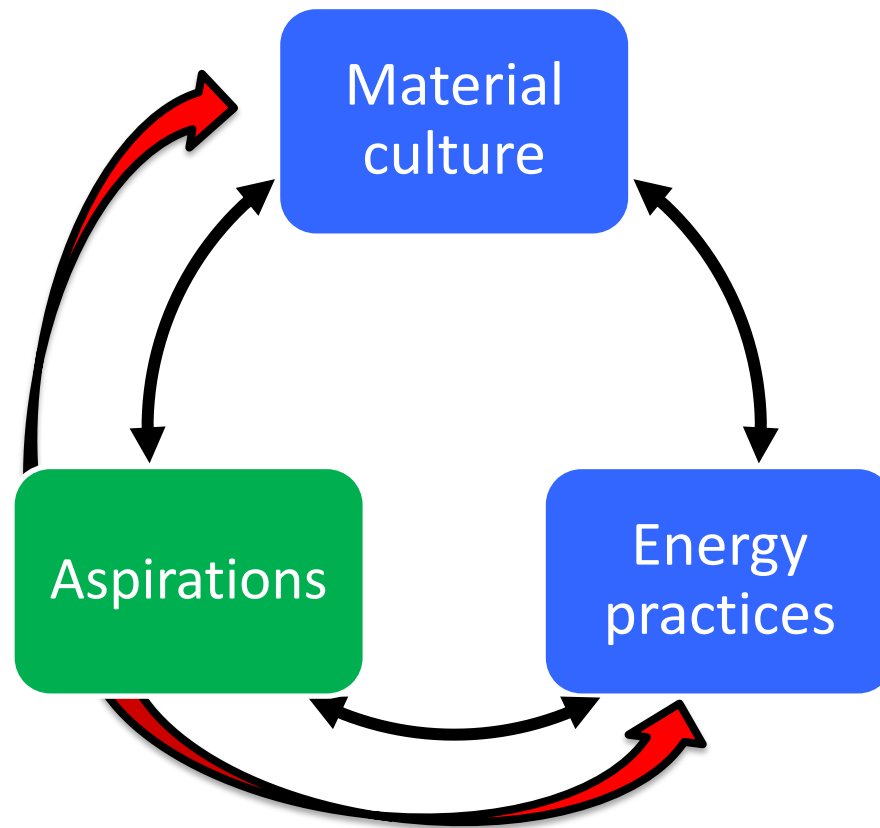


What energy use change has your household made recently?

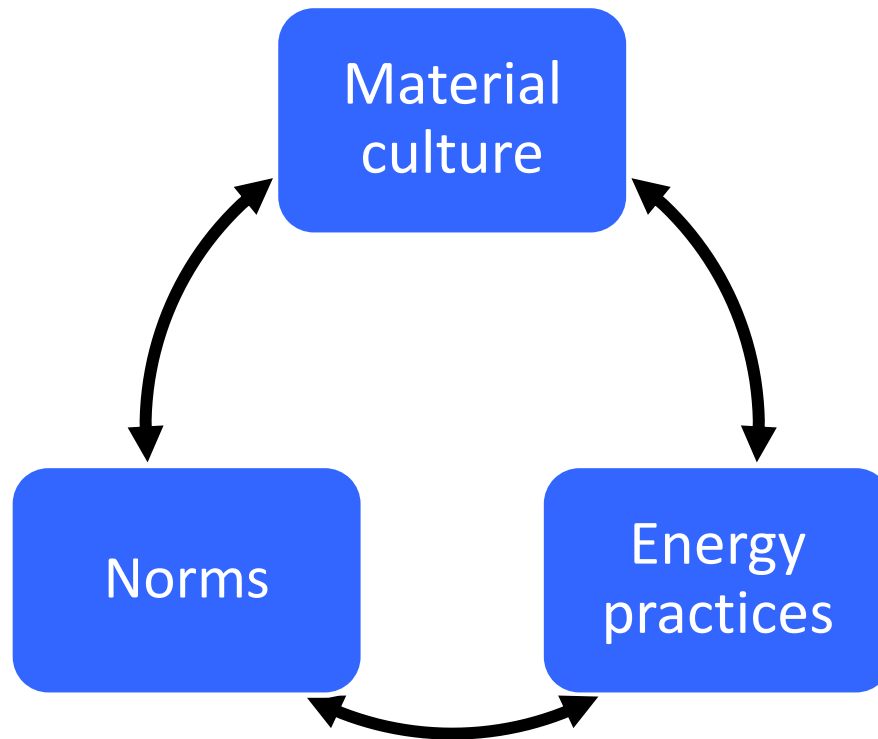
Internal influences on change: new aspirations



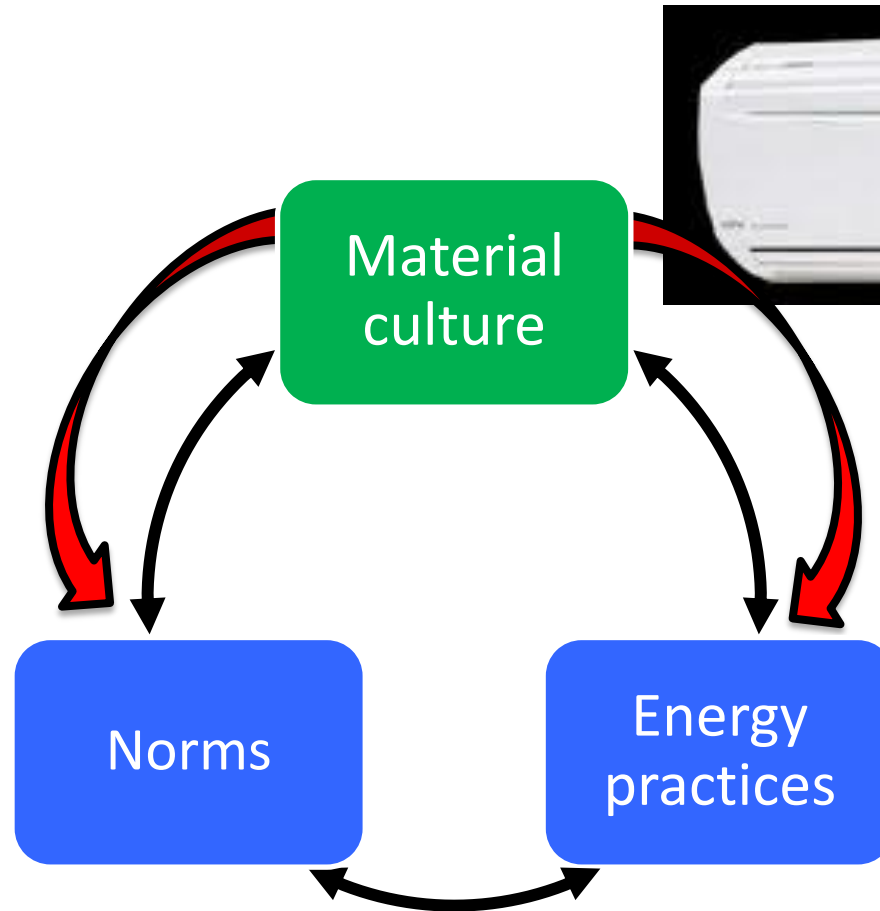
Internal influences on change: new aspirations



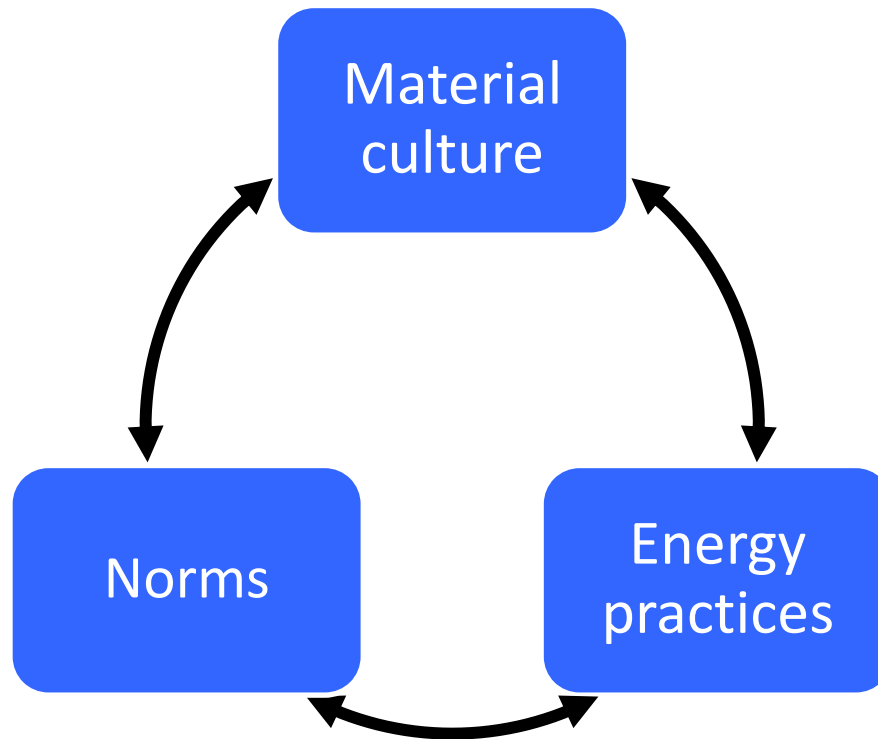
Internal influences on change: material culture



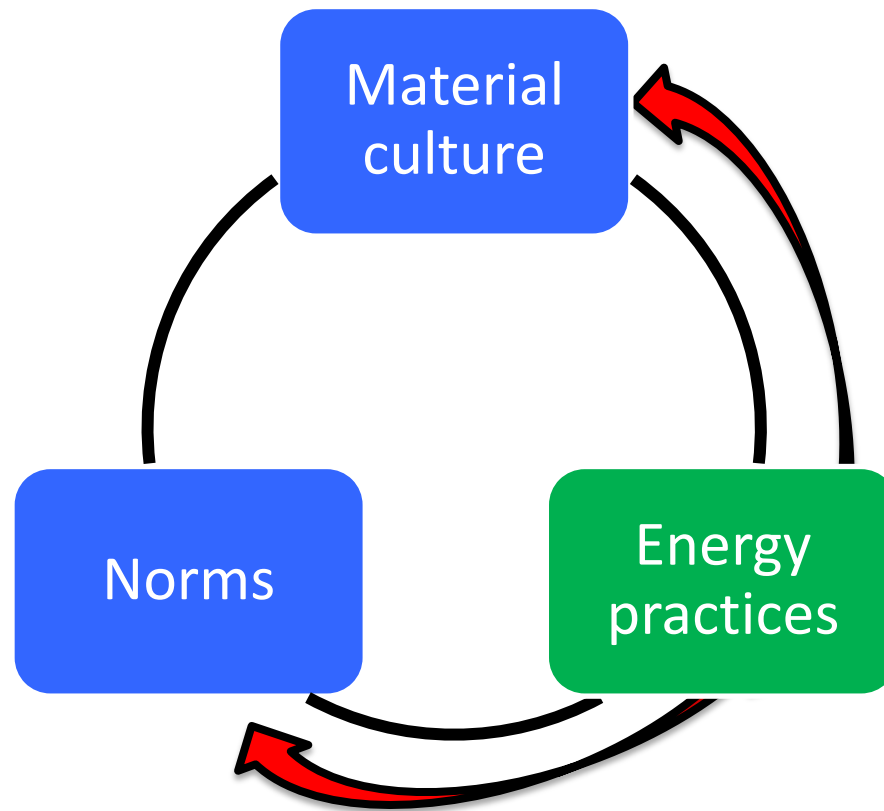
Internal influences on change: material culture



Internal influences on change: energy practices



Internal influences on change: energy practices



External influences supporting a new energy culture: Becky

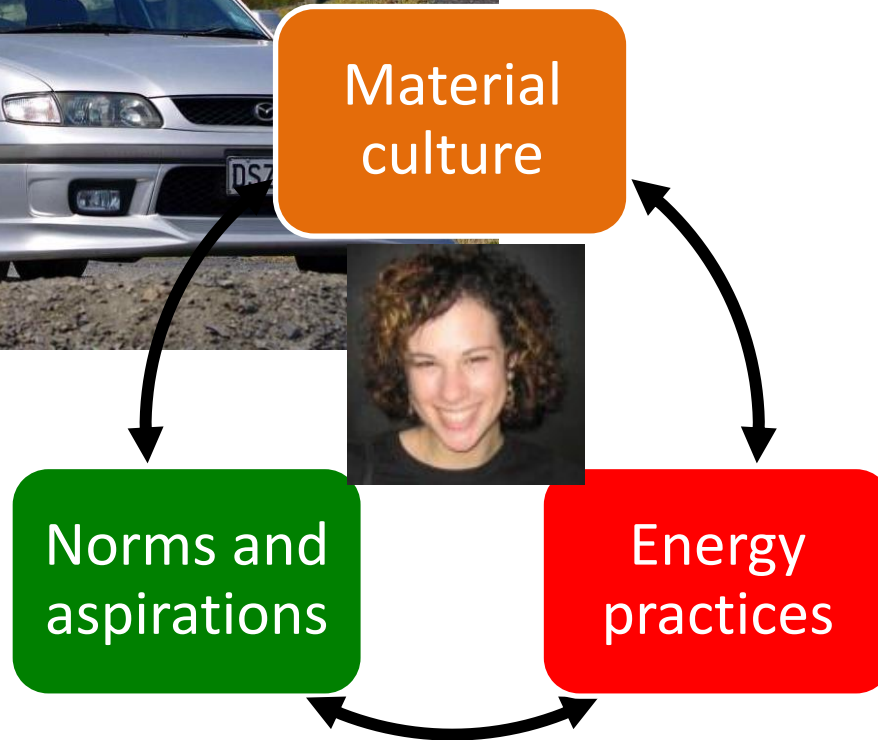


Material culture

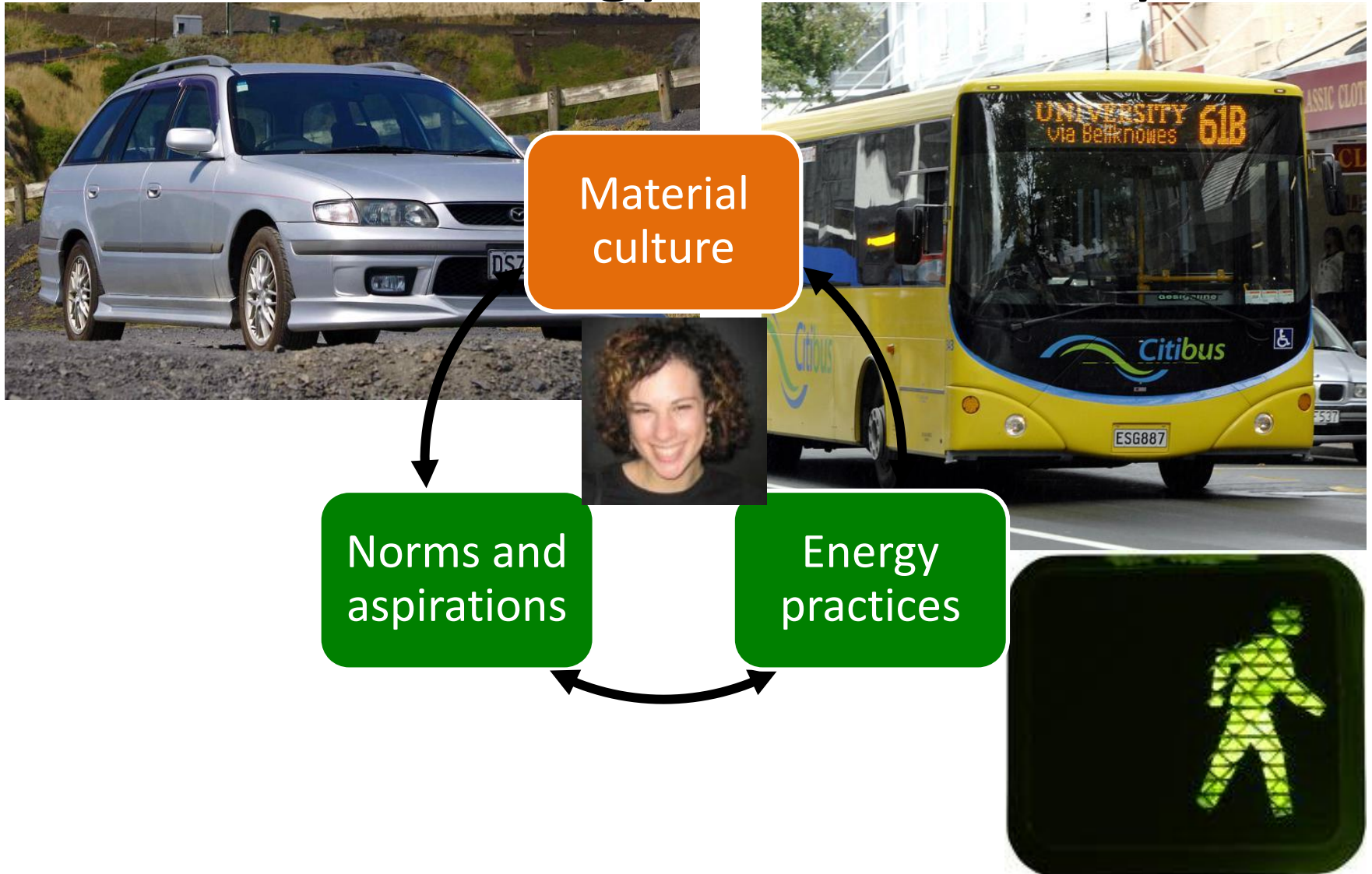


Norms and aspirations

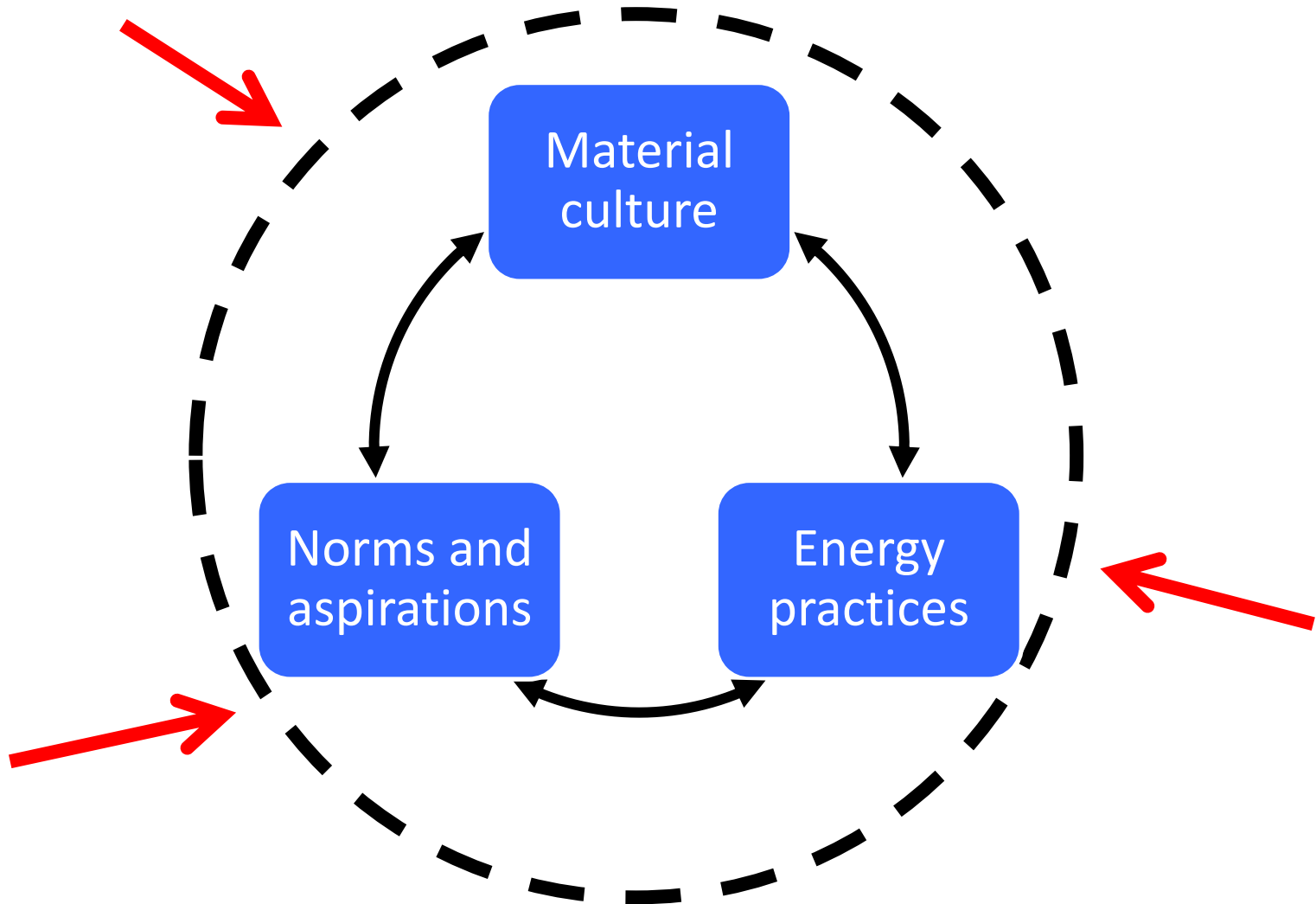
Energy practices



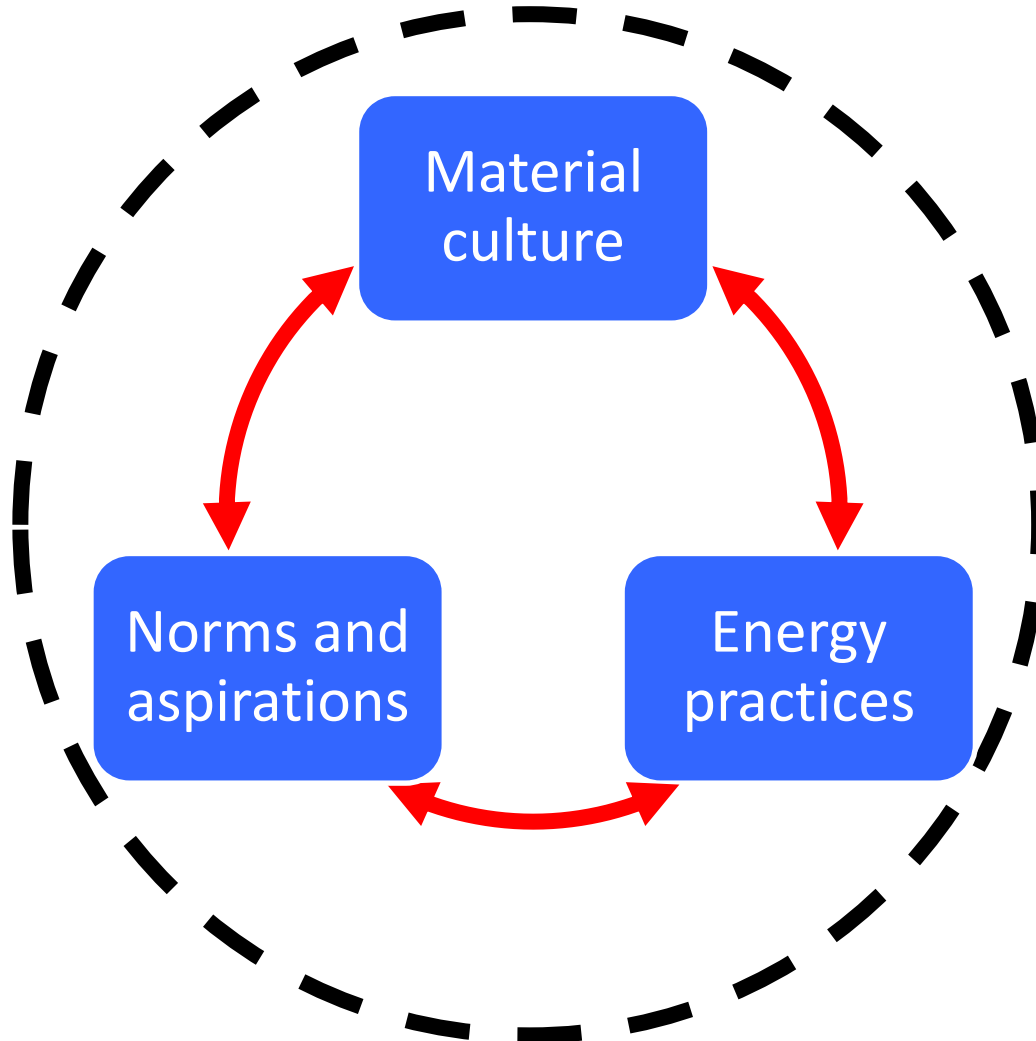
External influences supporting a new energy culture: Becky



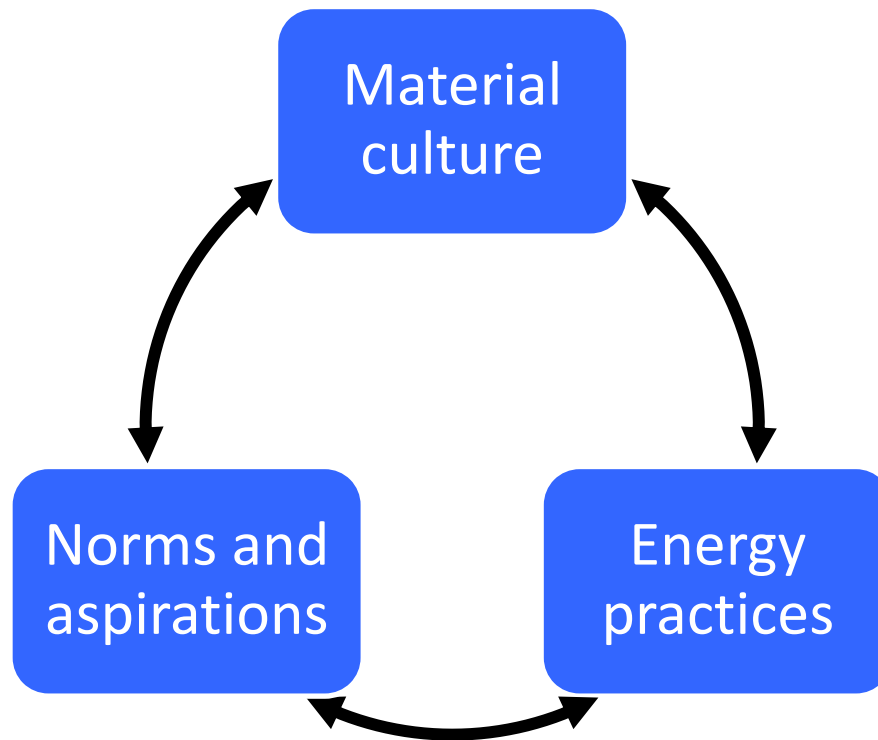
The Energy Cultures frameworks encourages us to ask: *What external influences need to change?*



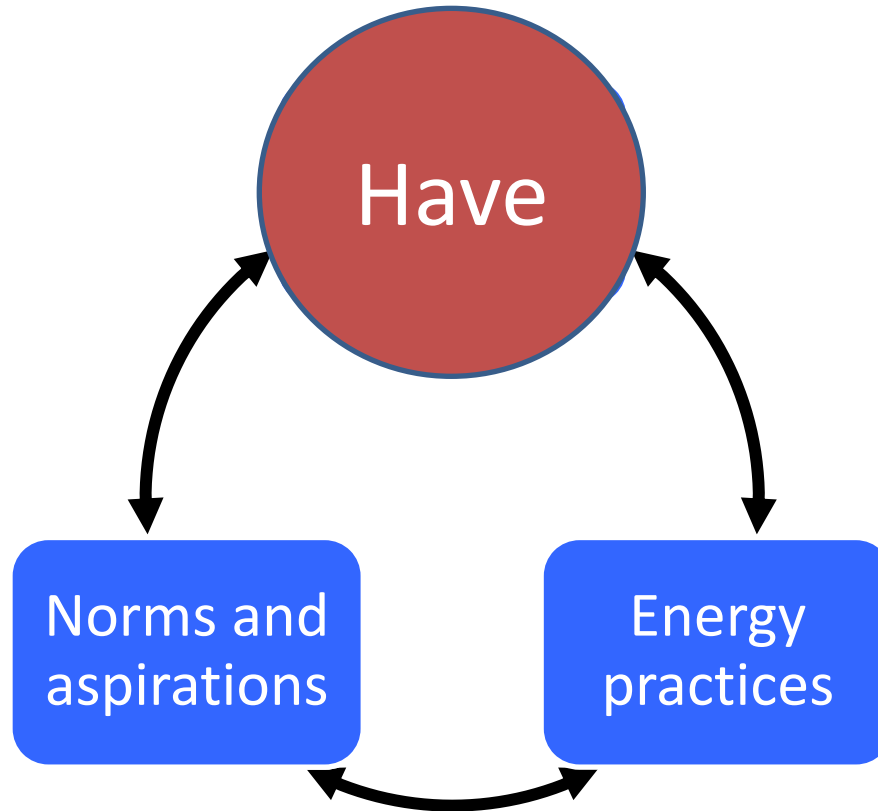
And: What will be the repercussions?



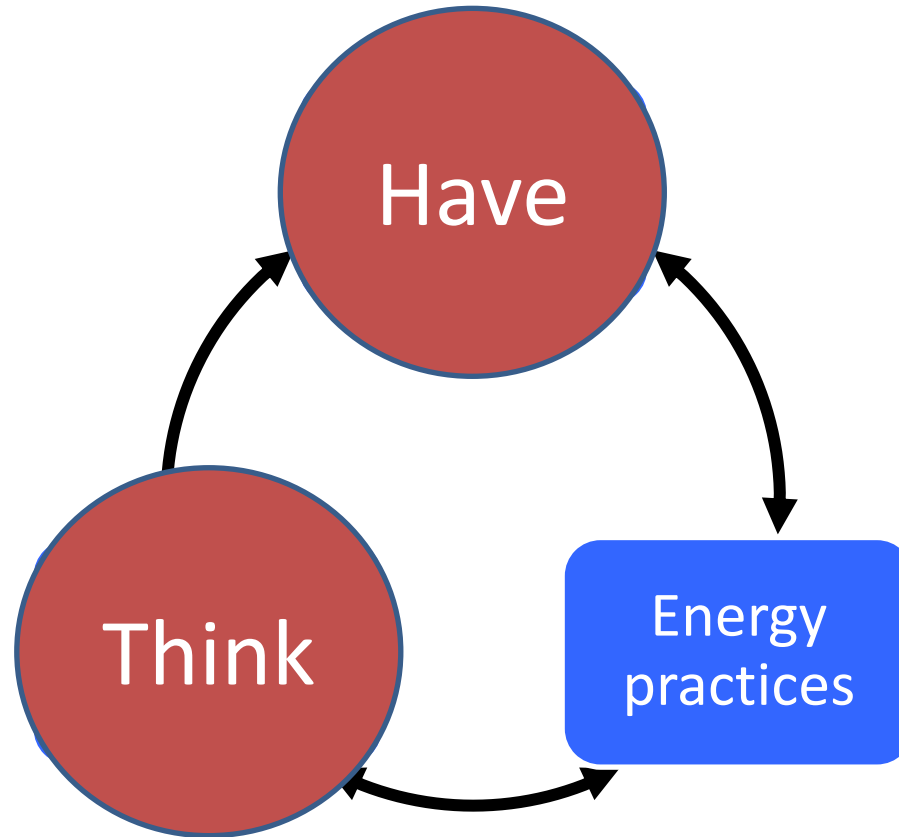
A cultural approach to behaviour



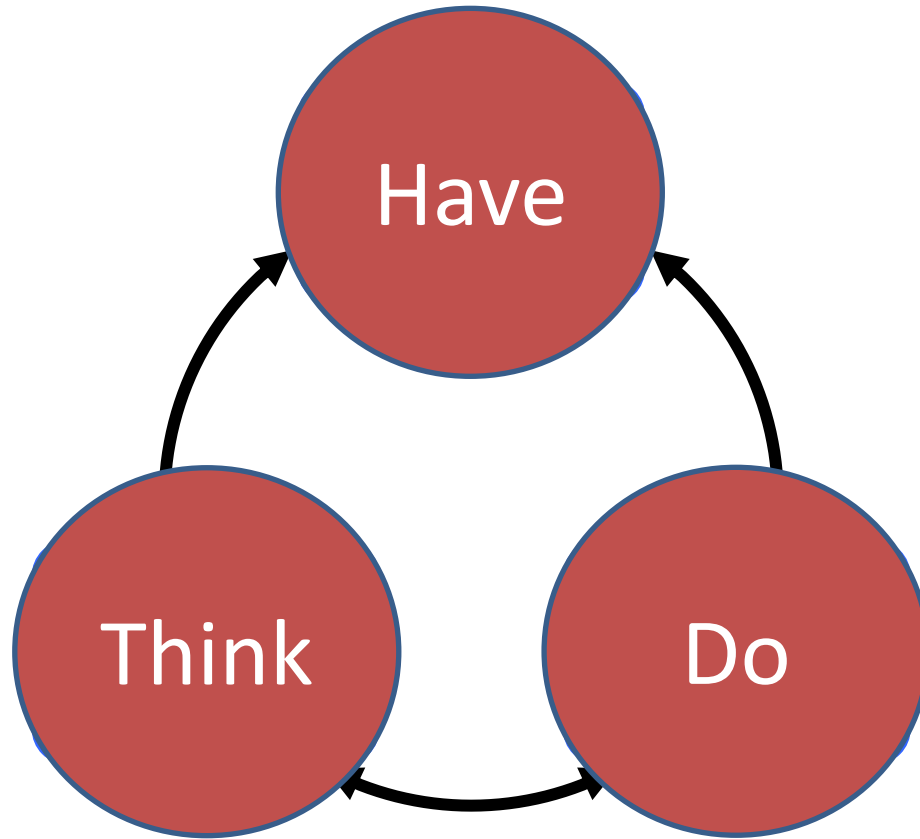
A cultural approach to behaviour



A cultural approach to behaviour



A cultural approach to behaviour



INFLUENCES / ALIGNMENTS

- Social context of E behaviour - Wilk, Barr & Gilg
- Actor-Network theory – Latour
- Habitus - Bourdieu
- Systems thinking – Checkland, Midgley
- Socio-technical systems – Geels, Schot, Smith
- Practice theory – Shove
- Embeddedness in cultural processes - Lutzenhiser

**ENERGY CULTURES FRAMEWORK
SUPPORTING INTERDISCIPLINARITY**



Start

Framing the research

Research design

Values laddering (psychology)

Household Surveys (marketing)

Choice modelling (economics)

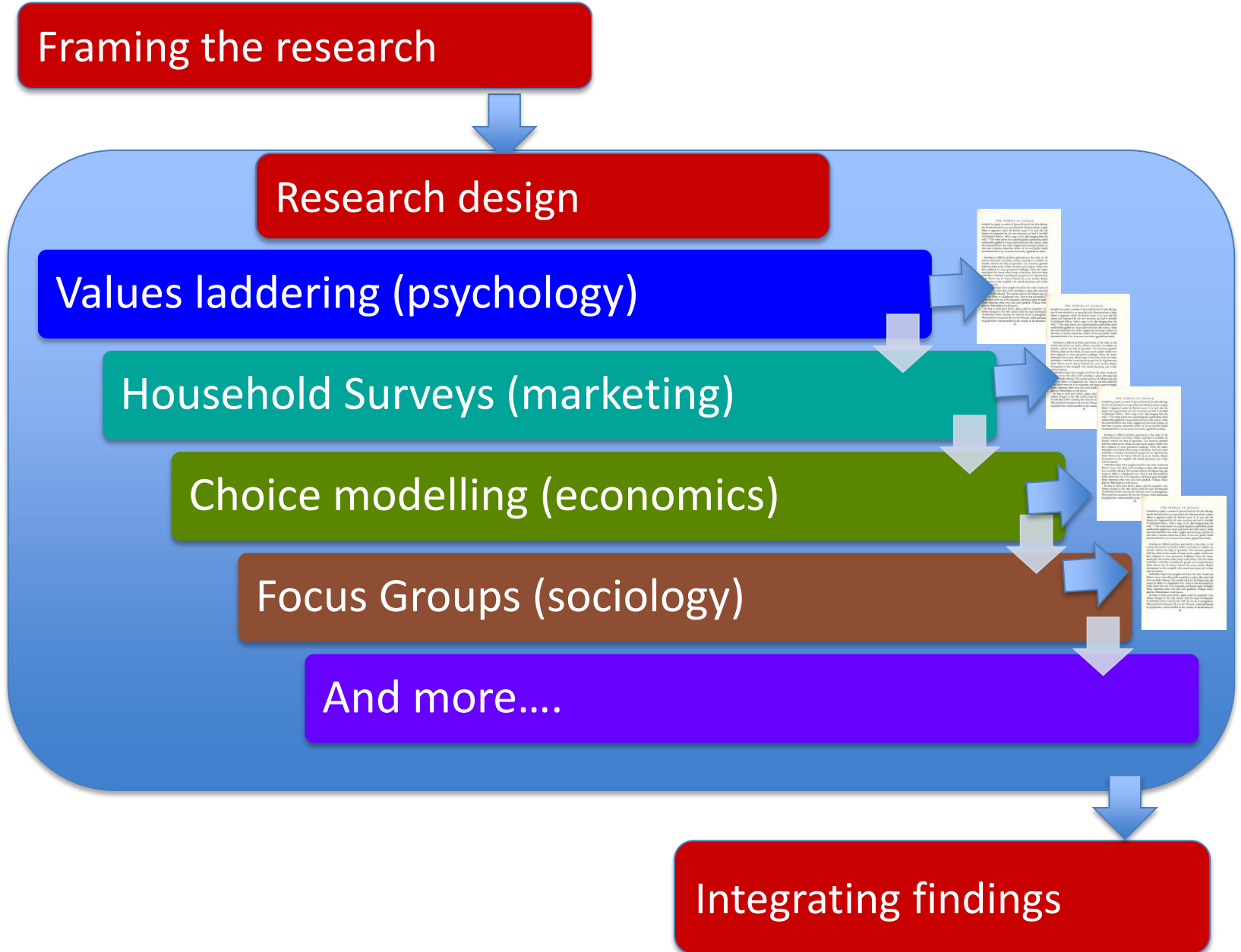
Focus Groups (sociology)

And more....

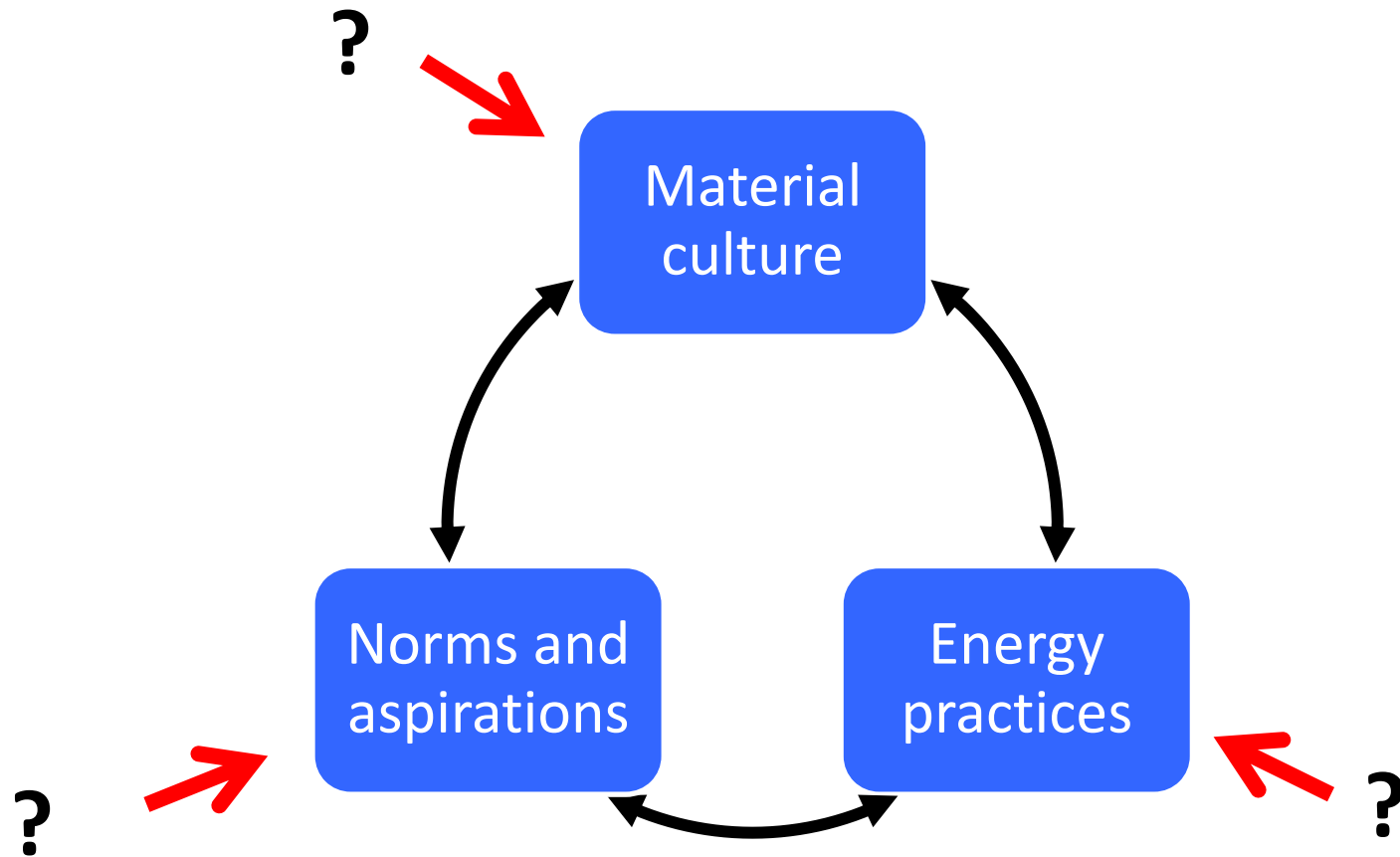
Integrating findings



End

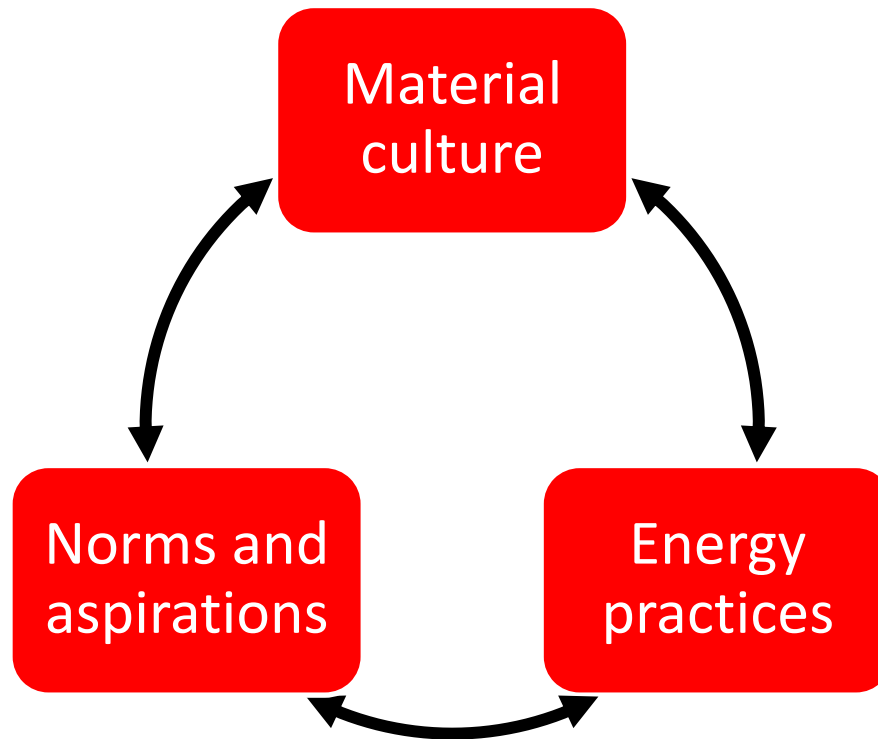


How influential are values on EE behaviour?
Social psychology – ‘laddering’



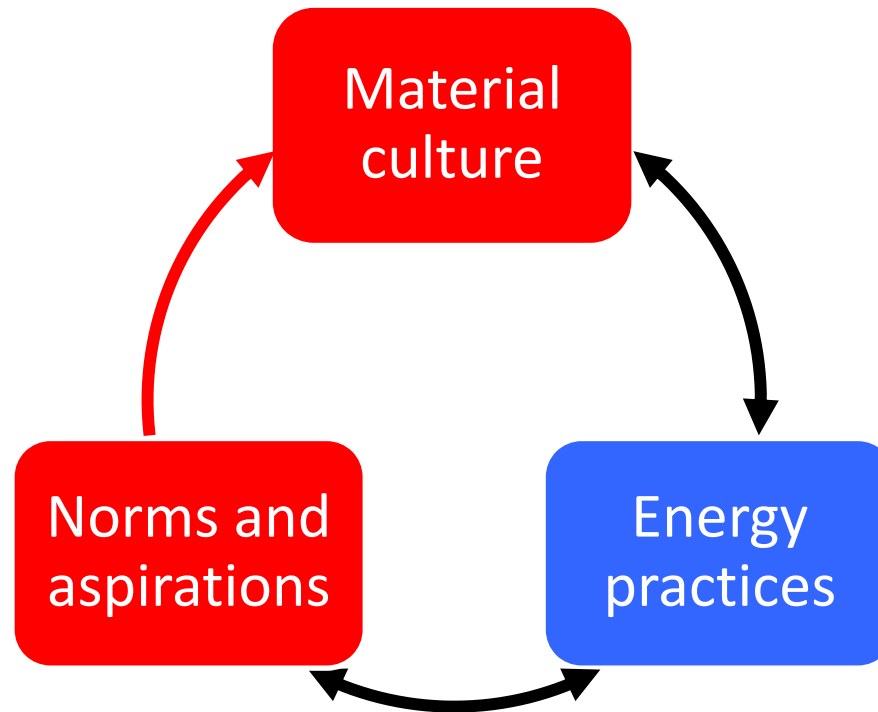
Characteristics of NZ households?

Social science - National survey



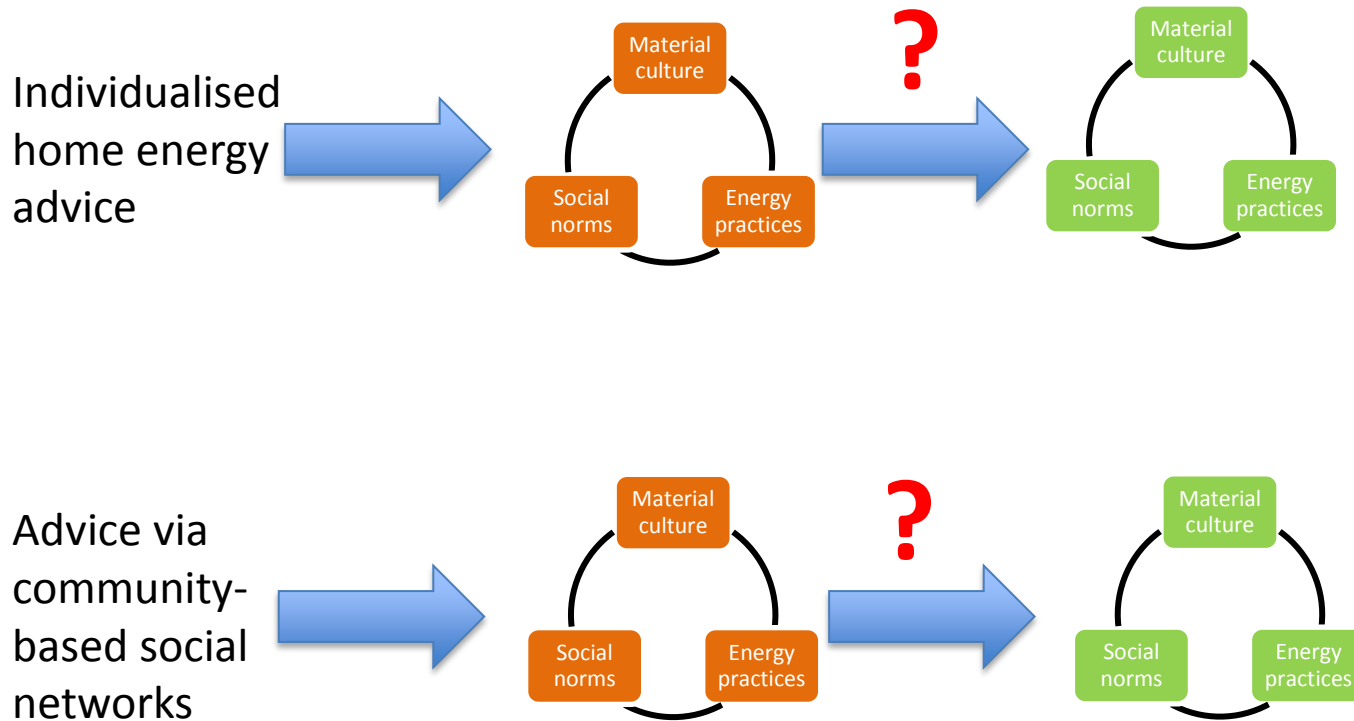
Consumer preference for heating & hot water technologies?

Economics - Choice modelling



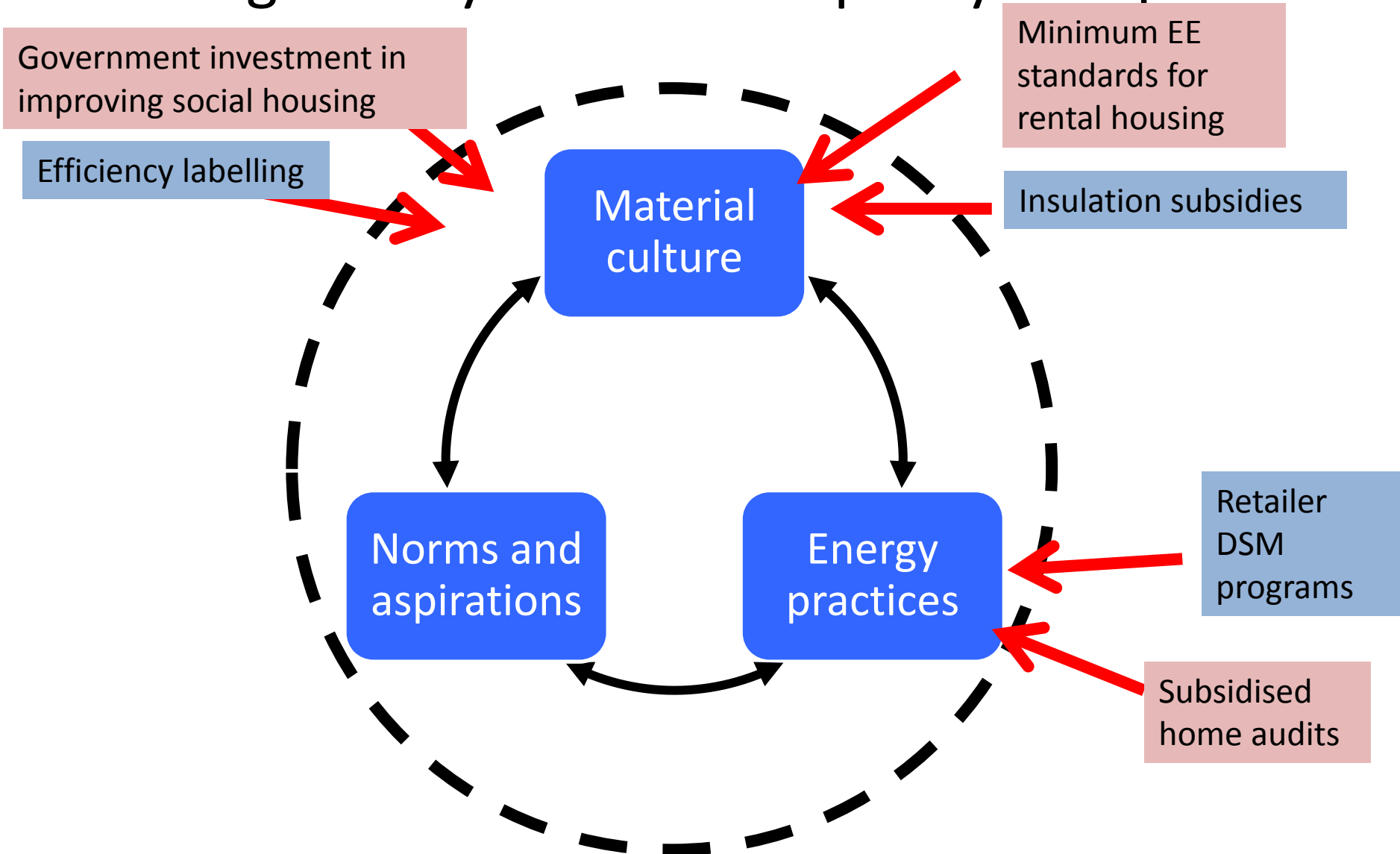
Comparing interventions for energy change

Social science: surveys, interviews



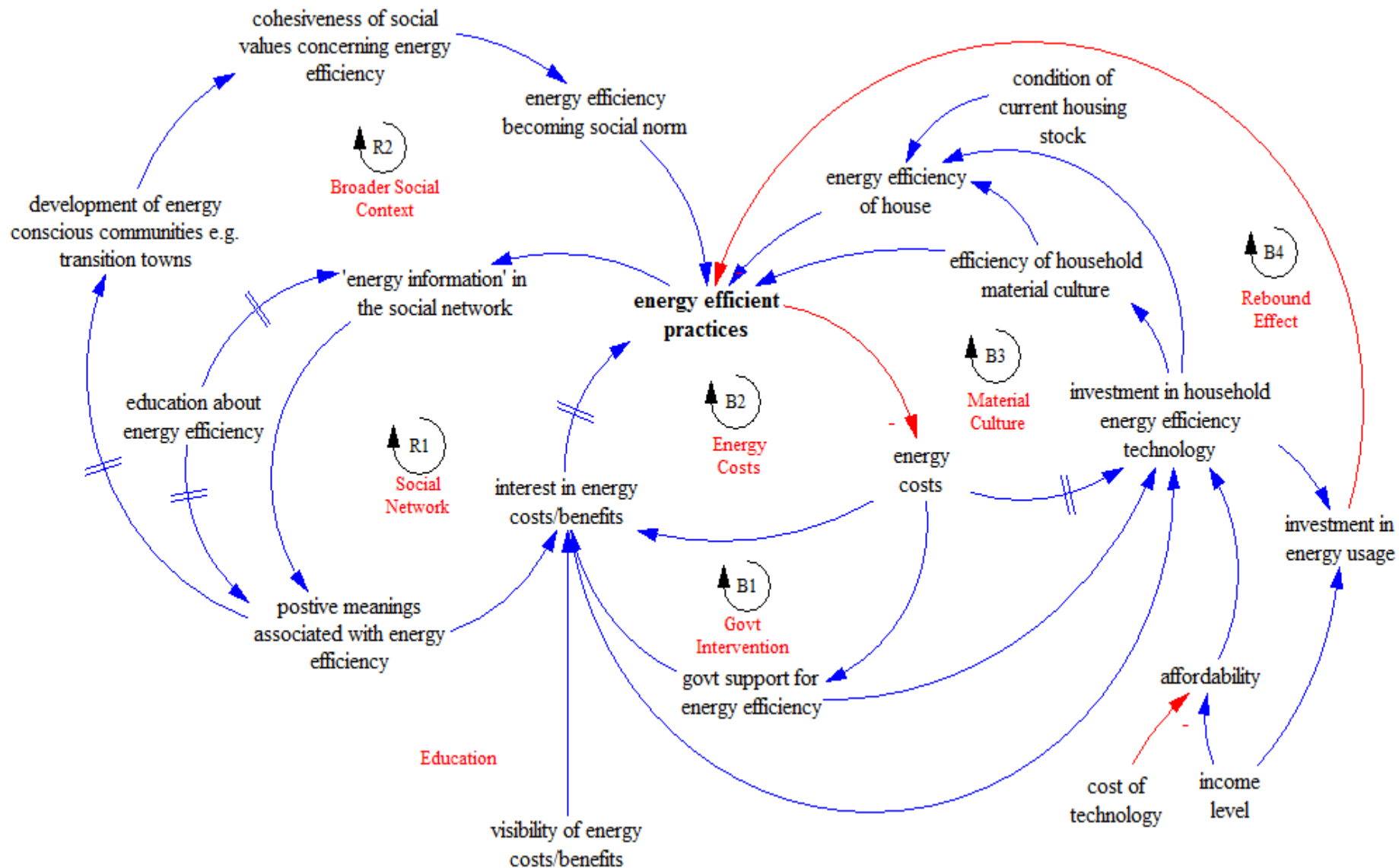
Regulatory framework for energy efficiency?

Legal analysis - law and policy critique



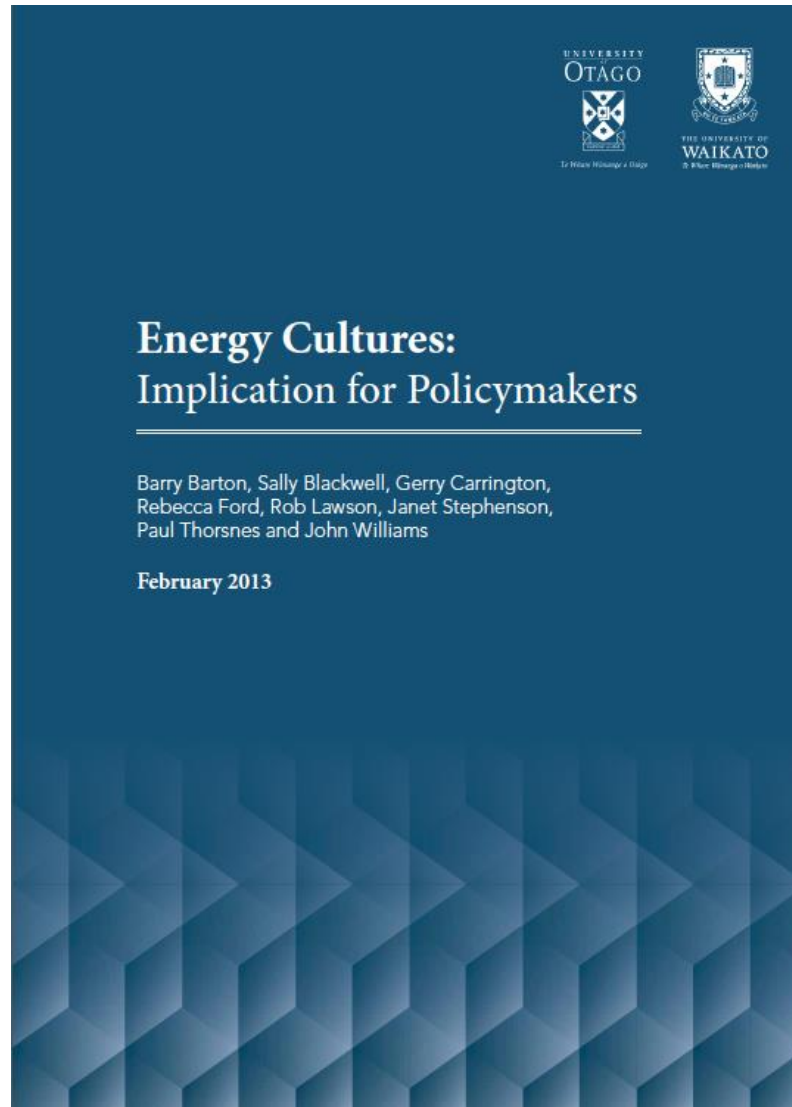
Integrating across findings

System Dynamics modelling

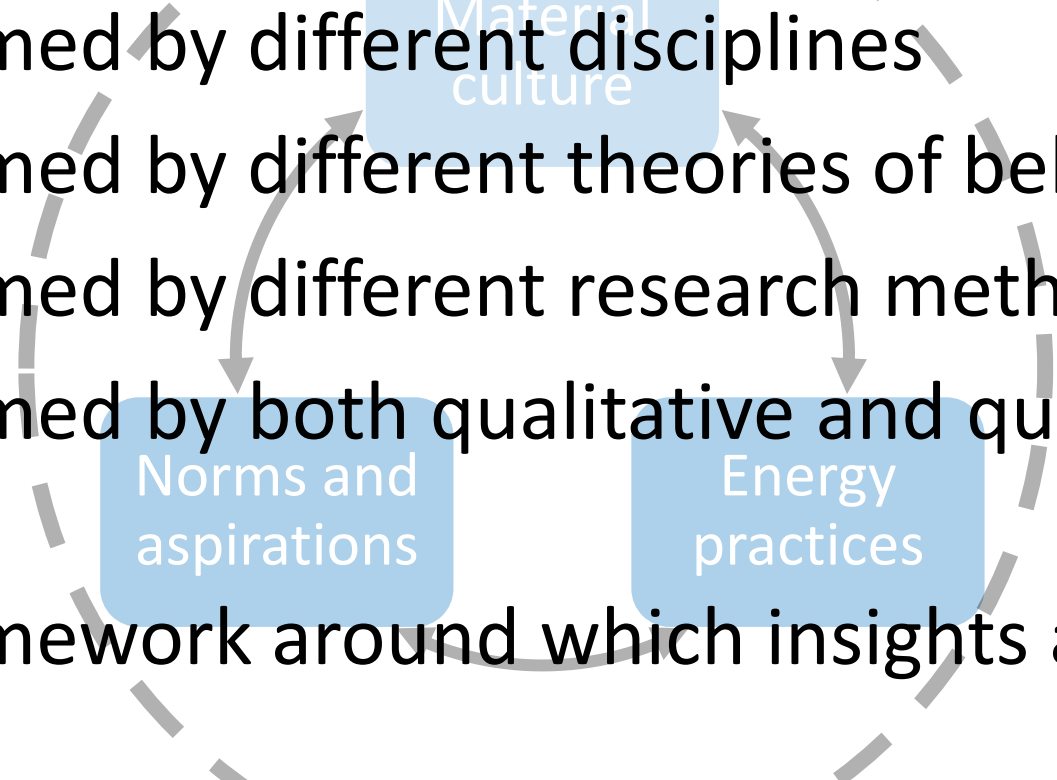


Integrating across findings

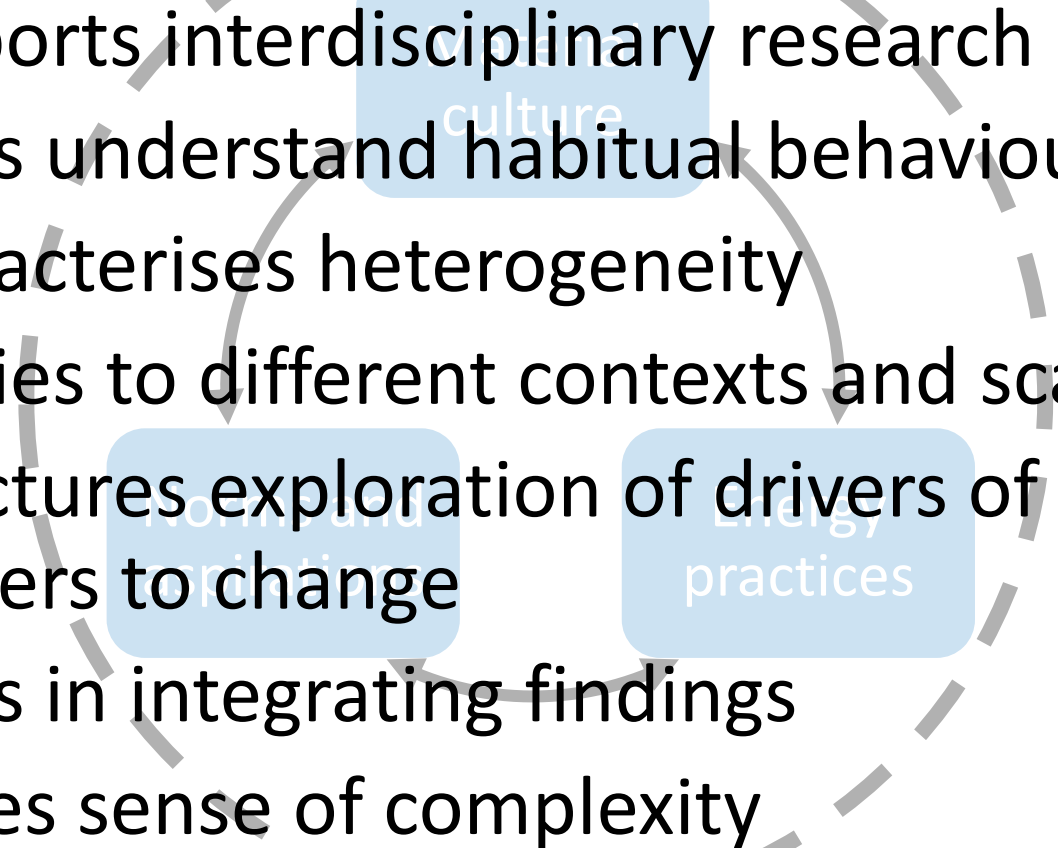
Policy implications of all streams



Energy Cultures as an integrating framework

- Informed by different disciplines
 - Informed by different theories of behaviour
 - Informed by different research methodologies
 - Informed by both qualitative and quantitative data
 - A framework around which insights are built up
- 
- ```
graph TD; A[Material culture] --> B[Energy practices]; B --> C[Norms and aspirations]; C --> A;
```

# Adaptability of the Framework

1. Supports interdisciplinary research
  2. Helps understand habitual behaviour
  3. Characterises heterogeneity
  4. Applies to different contexts and scales
  5. Structures exploration of drivers of and barriers to change
  6. Helps in integrating findings
  7. Makes sense of complexity
- 



UNIVERSITY  
of  
**OTAGO**

Te Whare Wānanga o Ōtāgo  
NEW ZEALAND



Energy Cultures



Science +  
Innovation

# Publications to date

- Barton, B., Blackwell, S., Carrington, G., Ford, R., Lawson, R., Stephenson, J., Thorsnes, P., Williams, J. (2013) *Energy Cultures: Implications for Policymakers*. Research Report, Centre for Sustainability, University of Otago, Dunedin, New Zealand. ISBN: 978-0-473-23717-2
- Barton, B. (2012) The Denominator Problem: Energy Demand in a Sustainable Energy Policy. *Policy Quarterly* 9(1): 3-8.
- Barton, B. (2012). *Energy Efficiency and Rental Accommodation: Dealing with Split Incentives*. Hamilton, NZ: University of Waikato Centre for Environmental, Resources and Energy Law, unpublished paper.
- Eusterfeldhaus, M., & Barton, B. (2012) Energy Efficiency: A Comparative Analysis of the New Zealand Legal Framework. *Journal of Energy and Natural Resources Law* 29:4 431-470.
- Grieve, C., Lawson, R. & Henry, J. (2012). Understanding the non-adoption of energy efficient hot water heating systems in New Zealand. *Energy Policy*, 48, 369-373.
- Lawson, R., Miroso, M., Gnoth, D., & Hunter, A. (2010, December) Personal Values and Energy Efficiency. Presented at the annual conference of the Australia and New Zealand Academy of Marketing, Christchurch, available <http://anzmac2010.org>.
- Lawson, R. & Williams, J., (2012, December). Understanding Energy Cultures. Presented at the annual conference of the Australia and New Zealand Academy of Marketing, Adelaide.
- Lawson, R. & Williams, J. (2012, December). The Nature of Fuel Poverty in New Zealand. Presented at the annual conference of the Australia and New Zealand Academy of Marketing, Adelaide.

# Publications cont.

- Miroso, M., Gnoth, D., Lawson, R. & Stephenson, J. (2010, November). *Characteristics of Household Energy Behaviours* (Centre for the Study of Agriculture, Food and the Environment, University of Otago, unpublished report for EECA).
- Miroso, M., Gnoth, D., Lawson, R., & Stephenson, J., (2011, June) Rationalising Energy-Related Behaviour in the Home: Insights from a Value-Laddering Approach. European Council for an Energy-Efficient Economy Summer Study, France, pp 2109-2119.
- Miroso, M., Lawson, R., & Gnoth, D. (2011) Linking Personal Values to Energy-Efficient Behaviors in the Home. *Environment and Behaviour* (27) 1-21;
- Stephenson, J., Barton, B., Carrington, G., Gnoth, D., Lawson, R., & Thorsnes, P. (2010). Energy Cultures: A framework for understanding energy behaviours. *Energy Policy*, 38, 6120–6129.
- Stephenson, J., Lawson, R., Carrington, G., Barton, B., Thorsnes, P., & Miranda, M. (2010). The Practice of Interdisciplinarity. *International Journal of Interdisciplinary Social Sciences*, 5:7, 271-282.
- Stephenson, J. & Carswell, P. (2012, September 20-21). *Energy Cultures and Social Networks – influences on household energy behaviour*. Paper presented at the Energy Efficiency and Behaviour Conference, Helsinki, Finland.
- Thorsnes, P. (2011, June) Household preferences for energy-efficient space and water heating systems. International Association for Energy Economics (IAEE) International Conference, Stockholm, Sweden.
- van den Dungen, S., & Carrington, G. (2011). Minimum Energy Performance Standards: How does New Zealand Compare with Other Countries? CSAFE, University of Otago.