Changing Human Behaviour
Insights from Behavioural Science

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Changing Human Behaviour

I. Changing Minds

II. Changing Environments

III. Changing Minds about Changing Environments to Change Behaviour
I Changing Minds to Change Behaviour

Less effective

Perception of Threat
Not big enough

Behaviour
*Even if motivated to change*

More effective

Environments have a strong influence on much of our behaviour
II Changing Environments to Change Behaviour

Physical

Economic

Digital

Social

Commercial
“While these policies vary in their effectiveness and cost-effectiveness, evidence supports those that reduce the affordability of alcohol as the most effective and cost-effective approach to prevention and health improvement.”

Burton et al Lancet 2016
II Changing Environments to Change Behaviour

Physical
Economic
Digital
Social
Commercial
Cues in **Physical** Environments Shaping Behaviour

Properties of objects or stimuli

- **SIZE**
- **PRESENTATION**
- **INFORMATION**
- **FUNCTIONALITY**

Placement of objects or stimuli

- **AVAILABILITY**
- **POSITION**

Size
Size: Systematic Review

Aim
To estimate the impact of different portion, package or tableware sizes on selection or consumption of:

- food
- alcohol
- tobacco

72 studies  69  0  3
Size: Effect on alcohol consumption

Wine glass size in England: 1700-2017

Zupan, Evans, Couturier, Marteau BMJ 2017
Wine Glass Size and Wine Sales
Meta-analysis of experimental studies

Pilling, Clarke, Hollands, Marteau under review
Wine Bottle Size and Consumption

Impact on in-home consumption of 75 cl vs 50 cl bottles of wine: An RCT

Mantzari, Codling, Pechey, Hollands, Pilling, Marteau in progress
Availability and Alcohol (vs non-Alcohol)

Altering the Availability or Proximity of Food, Alcohol and Tobacco Products to Change their Selection or Consumption (Review)

<table>
<thead>
<tr>
<th></th>
<th>Food</th>
<th>Alcohol</th>
<th>Tobacco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Proximity</td>
<td>18</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>

Hollands, Carter, Anwer, King, Jebb, Ogilvie, Shemilt, Higgins, Marteau in press
Proximity: Sales on Aisle Ends

Effect sizes equivalent to decrease in price per volume of:

- **Beer:** 4% (£0.17)
- **Wine:** 6% (£0.40)
- **Spirits:** 9% (£1.17)
- **Fizzy drinks:** 22% (£0.27)
- **Coffee:** 36% (£0.96)
- **Tea:** 62% (£1.19)

Information on Labels

“Linking alcohol causally with cancer (and other chronic diseases) reliably makes alcohol seem more risky”
Impact of Health Warning Labels on Selection: Soft drinks, Food and Alcohol

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Label</th>
<th>Total</th>
<th>Weight</th>
<th>Risk Ratio</th>
<th>M_H²</th>
<th>Random, 95% CI</th>
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<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td><strong>Soft drinks</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>ALCOT 2011</td>
<td>91</td>
<td>176</td>
<td>24</td>
<td>156</td>
<td>6.0%</td>
<td>0.90 [0.78, 1.05]</td>
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<tr>
<td>Billich 2017 (a)</td>
<td>93</td>
<td>109</td>
<td>50</td>
<td>95</td>
<td>6.0%</td>
<td>0.74 [0.60, 0.91]</td>
</tr>
<tr>
<td>Billich 2017 (b)</td>
<td>94</td>
<td>202</td>
<td>50</td>
<td>95</td>
<td>6.0%</td>
<td>0.68 [0.57, 0.82]</td>
</tr>
<tr>
<td>Mantzari 2019</td>
<td>213</td>
<td>258</td>
<td>101</td>
<td>129</td>
<td>0.8%</td>
<td>1.04 [0.77, 1.38]</td>
</tr>
<tr>
<td>Mantzari unpublished</td>
<td>54</td>
<td>120</td>
<td>52</td>
<td>108</td>
<td>4.8%</td>
<td>0.62 [0.41, 0.95]</td>
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<tr>
<td>Radio 2015</td>
<td>632</td>
<td>1556</td>
<td>241</td>
<td>404</td>
<td>10.3%</td>
<td>0.68 [0.51, 0.87]</td>
</tr>
<tr>
<td>VanEps 2016</td>
<td>940</td>
<td>1484</td>
<td>251</td>
<td>370</td>
<td>12.0%</td>
<td>0.09 [0.76, 0.90]</td>
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<tr>
<td><strong>Subtotal (95% CI)</strong></td>
<td>4395</td>
<td>1587</td>
<td>53.6%</td>
<td>0.74 [0.64, 0.86]</td>
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<tr>
<td>Total events</td>
<td>2000</td>
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<td>949</td>
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<tr>
<td>Heterogeneity Tau²</td>
<td>0.03</td>
<td>Ch² = 40.81, df = 8 (P &lt; 0.00001), P = 0.65%</td>
<td></td>
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<tr>
<td>Test for overall effect</td>
<td>Z = 3.93 (P &lt; 0.00001)</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td><strong>Food</strong></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Clarke unpublished - food (a)</td>
<td>515</td>
<td>1380</td>
<td>202</td>
<td>343</td>
<td>10.3%</td>
<td>0.63 [0.57, 0.70]</td>
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<tr>
<td>Clarke unpublished - food (b)</td>
<td>628</td>
<td>1371</td>
<td>202</td>
<td>343</td>
<td>10.3%</td>
<td>0.78 [0.70, 0.86]</td>
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<tr>
<td><strong>Subtotal (95% CI)</strong></td>
<td>2751</td>
<td>404</td>
<td>20.9%</td>
<td>0.70 [0.58, 0.85]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total events</td>
<td>1141</td>
<td></td>
<td>404</td>
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<td></td>
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<tr>
<td>Heterogeneity Tau²</td>
<td>0.02</td>
<td>Ch² = 6.61, df = 1 (P = 0.01), P = 0.65%</td>
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<tr>
<td>Test for overall effect</td>
<td>Z = 3.51 (P = 0.00004)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Alcohol</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Clarke unpublished - alcohol (a)</td>
<td>837</td>
<td>1501</td>
<td>578</td>
<td>765</td>
<td>12.2%</td>
<td>0.73 [0.69, 0.77]</td>
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<tr>
<td>Clarke unpublished - alcohol (b)</td>
<td>926</td>
<td>1511</td>
<td>578</td>
<td>765</td>
<td>12.2%</td>
<td>0.80 [0.76, 0.85]</td>
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<tr>
<td><strong>Subtotal (95% CI)</strong></td>
<td>3012</td>
<td>1510</td>
<td>24.5%</td>
<td>0.76 [0.70, 0.84]</td>
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<tr>
<td>Total events</td>
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<td></td>
<td>1156</td>
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<tr>
<td>Heterogeneity Tau²</td>
<td>0.00</td>
<td>Ch² = 5.08, df = 1 (P = 0.02), P = 88%</td>
<td></td>
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<tr>
<td>Test for overall effect</td>
<td>Z = 5.70 (P &lt; 0.00001)</td>
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<td></td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>4884</td>
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<td>2508</td>
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<tr>
<td>Heterogeneity Tau²</td>
<td>0.01</td>
<td>Ch² = 56.07, df = 10 (P &lt; 0.00001), P = 82%</td>
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<tr>
<td>Test for overall effect</td>
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<tr>
<td>Test for subgroup differences: Ch² = 0.61, df = 2 (P = 0.74), P = 0%</td>
<td></td>
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</tbody>
</table>

Clarke, Pechey, Kosite, König, Mantzari, Blackwell, Marteau, Hollands under review
Impact of labels on selection of an alcoholic drink

- Alcohol causes bowel cancer: 56% for Alcohol, 49% for No Alcohol
- Alcohol causes bowel cancer: 61% for Alcohol, 77% for No Alcohol
- No label: 77% for Alcohol, 77% for No Alcohol

Clarke, Pechey, Mantzari, Blackwell, De-Loyde, Morris, Marteau, Hollands in prep
Acceptability of Graphic Health Warning Labels on Alcohol

I do think there should definitely be warnings on alcohol bottles/cans etc. They have them on cigarettes so I think this is no different and may discourage people from drinking too much.

I think anything that can have an adverse effect on your health should have a clear warning on it to give people an informed choice as there is so much marketing to persuade young people that it is safe with no risk.

What next? Don’t breathe its bad for you? Don’t live it’s bad for you? Don’t enjoy your life it’s bad for you? F*** Off Nanny State

This is a ridiculous level of nanny state behaviour and complete lack of making people take responsibility for their own actions.

Pechey, Clarke, Mantzari, Blackwell, De-Loyde, Morris, Marteau, Hollands in prep
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Addressing Policy Inertia

Barriers leading to *Policy Inertia*:

i. inadequate political leadership and governance to enact policies

ii. strong opposition to policies by powerful commercial interests

iii. lack of demand for policy action by the public
Political Leadership
Population-level Intervention as Punishment

MATT Hancock declared war on the nanny state yesterday by arguing against a booze tax and saying a pint was “perfectly healthy”.

The Health Secretary added that it was time to stop “punishing” everybody by issuing diktats to the entire nation – and to instead target public health messages to those who need it.

Tory leadership contender Sajid Javid vows to freeze fuel duty saving millions...

SAjid Javid today vows to freeze fuel duty for at least two more years – while launching Britain’s drive to ‘net-zero’ emissions. In a huge endorsement of The ...
Powerful Commercial Interests
Industry responses to interventions to reduce consumption
Public Demand vs. Acceptability

Public acceptability of population-level interventions to change behaviour to improve population health varies by:

i. behaviour
ii. policy
iii. who is asked
iv. how they are asked
Public Support and Evidence of Effectiveness

Support for Policy

decreased  increased

36 Experiments: results pooled

When told or shown evidence of effectiveness for policies on Health, Environment or other areas....

Support for a policy increased

Estimated increase = 4% (3% to 5%)

SMALLER with competing messages in real world?

Reynolds, Stautz, Pilling, van der Linden, Marteau under review
Changing Human Behaviour

I. Changing Minds to change behaviour at best, small effects at population level

II. Changing Environments to change behaviour; largest effects at population level; likely changes minds by changing social norms

III. Changing Minds of Publics and Politicians about Changing Environments to Change Behaviour to achieve benefits of effective and cost-effective alcohol control policies

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