ALIGNING ARGUMENTATION THEORY WITH BEHAVIOUR CHANGE MECHANISMS

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[http://www.arg.dundee.ac.uk/sad13]
INTRODUCTION

• Many people want to change their behaviour: exercise more, eat healthily, quit smoking, &c, ...  

• Behaviour change (forming new habits/kicking existing habits) is difficult

• **Support** makes a big difference to successful behaviour change whether individual, e.g. NHS stop smoking advisors, or group, e.g. supports groups for just about EVERYTHING

• 1:1 support is not feasible for some big problems

• *Digital Behaviour Management* uses technology to support behaviour change
TOWARDS SUSTAINABLE BEHAVIOUR CHANGE

• Adapt existing behaviour change theories
• Apply to digital interactions
• Integrate with argumentation theory
• Aim for **sustainable** behaviour change
• Opportunities for large cost savings, improved environment, better quality of life, peace on earth, good will to all men, ...
SCENARIOS

• 1. Sustainable Urban Transportation

• 2. Managing Preventable Diseases
SUSTAINABLE URBAN TRANSPORTATION

• Worlds population is increasingly city-based (51% now live in urban areas)

• Transport sector represents 30% of EU final energy consumption & major source of emissions & pollutants

• Emissions from other sectors are generally falling, but transport emissions have risen by 36% since 1990

• Cars account for ~12% of total EU CO₂ emissions (similar numbers for CO, NO, PM, Ozone, Toxics, Volatiles)
  • With consequent effects on quality of life

• Individual travel habits can have a big impact on the quality of urban environments
MANAGING PREVENTABLE DISEASES

• 5 Biggest killers in the UK: Heart Disease, Stroke, Cancer, Lung & Liver Disease

• 150,000 Deaths/year (30,000 of which are estimated to be avoidable) in England alone

• Biggest causes of mortality in the UK have a lifestyle element

• If you can reduce the behaviours associated with unhealthy lifestyles: [1] Reduce Deaths [2] Save Money
BEHAVIOUR CHANGE

• Popular basic techniques:
  • Goal Setting+review | Monitoring+feedback | Comparison | Prompts+personalisation | Aiding/supporting decision making

• Two popular theoretical models:
  • Fogg’s Model of Persuasive Technology or “Captology”
  • Michie’s COM-B Model
CAPTOLOGY

- [M]otivation
- [A]bility (make behaviour easier/lower to target’s level)
- [T]rigger

(simultaneously) M+A+T = Behaviour more likely to occur
COM-B

- [C]apability
- [O]portunity
- [M]otivation

C + O + M ==> Behaviour Change
SO WHAT’S THE PROBLEM?

• Even if a person has the Capability & the Opportunity;

• If a person isn’t particularly motivated then
  • behaviour change is less likely to be successful, &

• If behaviour change is successful then
  • it is less likely to be life-long/lasting/sustainable
& HOW ARE WE GOING TO TACKLE IT?

• Informed choices are made in the presence of increased knowledge

• Dialogue is a good interaction mechanism for increasing a person’s knowledge about the context of their behaviour

• Argument is a good way to structure information if it is related to justifying positions

• Assumption: For behaviour change to be sustainable, target must make informed choices about their behaviour
MOTIVATING SUSTAINABLE BEHAVIOUR CHANGE

• Current behaviour changes theories & techniques
  • Have well developed theoretical models for managing behaviour, but
  • Techniques for achieving behaviour change are less well developed
  • Rudimentary forms of information-seeking/persuasion & use of incentivises and coercive techniques
BEHAVIOUR CHANGE & ARGUMENTATION

• Align well developed models of (1) interaction, (2) knowledge representation, & (3) reasoning from argumentation theory with the well developed models from behaviour change theory

• AIM:
  
  • [A] Use arguments to increase motivation
  
  • [B] Use dialogue to interact with users
  
  • [B] Adapt the rich range of argumentation schemes and dialogue models to work with behaviour change theories
RESEARCH QUESTIONS

• Which arguments are going to be most ‘persuasive’ for a given person?

• How do we recognise that one approach should be used rather than another?

• How do we deliver the arguments to our targets?

• What kinds of dialogue are most applicable?
CONCLUSIONS

• Some nice synergies between Behaviour Change Theory & Argumentation Theory

• Argumentation can provide rich interaction models & tools (philosophically & linguistically grounded)

• Behaviour change can provide rich psychological models & tools (important when dealing with real people instead of ideal agents)
REFERENCES


Because I know someone will ask:

- "What if a person isn’t even motivated enough to listen to the arguments/engage in dialogue/&c?”

Currently outside scope of research

Assume a minimal level of motivation:

- Many people recognise that they have behaviours that need to change (often there is some crisis that occurs early enough to raise the issue)

- Broad governmental policy & public information campaigns already raise awareness of issues

- Assume there is social diffusion: social norms shift as a result of (local & national) political will, opinion formers, and issue awareness