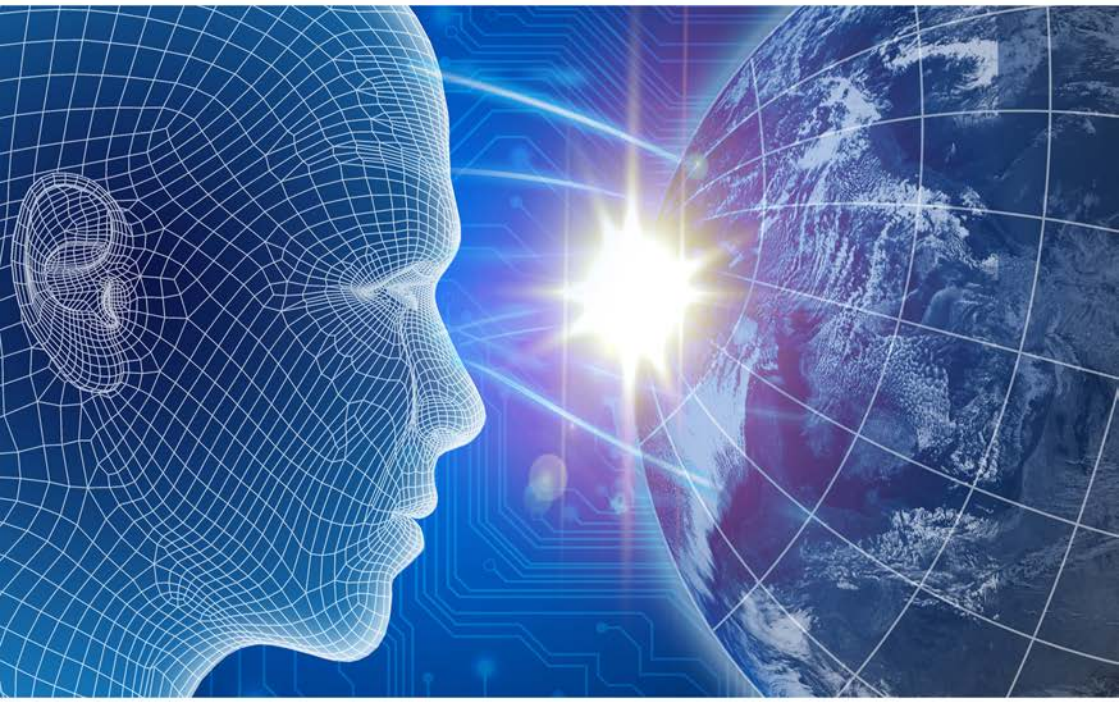

Human Behaviour Change Project

Building the science of behaviour change through machine learning

Supported by
wellcome trust

The Human Behaviour-Change Project will build an Artificial Intelligence system to continually scan the world literature on behaviour change, extract key information, and use this to build and update a model of human behaviour to answer the big question:

'What behaviour change interventions work, how well, for whom, in what settings, for what behaviours and why?'

UCL
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UNIVERSITY OF CAMBRIDGE
1495 UNIVERSITY OF ABERDEEN

The vision

The scientific literature on behaviour change is vast and accumulating at an accelerating rate. However, this literature is fragmented, and is inconsistently and incompletely reported. The result is that most of it is wasted. Current attempts to synthesise this evidence can take years, miss much that is relevant and fail to detect patterns that generate new testable hypotheses and knowledge.

It is now possible to create Artificial Intelligence systems to identify relevant information in the world literature, extract it into an organised knowledge base ('ontology') created by behavioural scientists, and generate new insights about behaviour change by generalising beyond the contexts in which the evidence has been generated.

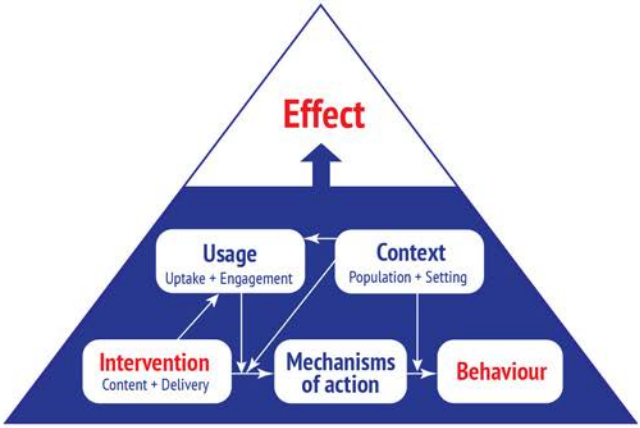
This knowledge base can then be interrogated on demand to answer questions about behaviour change, big and small. It will provide answers drawing on knowledge integrated from a broader literature than humans can review, and will also be able to point to relevant references as well as estimate the confidence with which statements can be made.

The project

The Human Behaviour-Change Project, funded by the Wellcome Trust and led by Professor Susan Michie, is a collaboration between behavioural scientists (Susan Michie, Marie Johnston, Mike Kelly, Robert West), computer scientists (John Shawe-Taylor and Pol Mac Aonghusa) and information scientist (James Thomas) based at University College London and Universities of Cambridge and Aberdeen, UK, and the IBM Research Laboratory in Ireland.

The behavioural scientists will develop an "ontology" of behaviour change interventions that will organise the fragmented knowledge in the scientific literature into a form that enables the efficient accumulation of knowledge, as shown below:

Top level of the Behaviour Change Intervention Ontology



The computer scientists will build an Artificial Intelligence system, trained by behavioural scientists, to apply Natural Language Processing to extract relevant information from scientific reports and to organise that information into the Ontology using reasoning and machine learning.

The information scientists will build and evaluate a user interface to interact with the Artificial Intelligence system to enable users to readily access the breadth and depth of up-to-date evidence, and get answers to their questions.

The Human Behaviour-Change Project will start in Autumn 2016. See more details at: **www.humanbehaviourchange.org**

The project needs behavioural scientists with outstanding ability who are interested in working on this challenging project. Anyone interested should send a brief statement and cv to Professor Susan Michie, s.michie@ucl.ac.uk.