

# New AI system will help us discover the most effective behaviour change strategies

August 16 2018, by Emma Norris, Mike Kelly And Susan Michie

---



Credit: AI-generated image ([disclaimer](#))

Changing people's behaviour is key to tackling the world's health, social and environmental problems, such as [obesity](#), sustainable living and cybersecurity. To change behaviour, though, we need to know what works, for whom, where and how. But [research is generated far faster](#) than humans can access and use it.

A search on Google Scholar for "[behaviour change](#)" produced over 60,000 hits for the first six months of 2018. Evidence on behaviour change interventions is also [messy](#). Different terms are often used to describe similar things – "physical activity" and "exercise", for example. This means different people can often mean different things when discussing or researching behaviour change. This lack of shared vocabulary limits our progress in discovering what interventions work best.

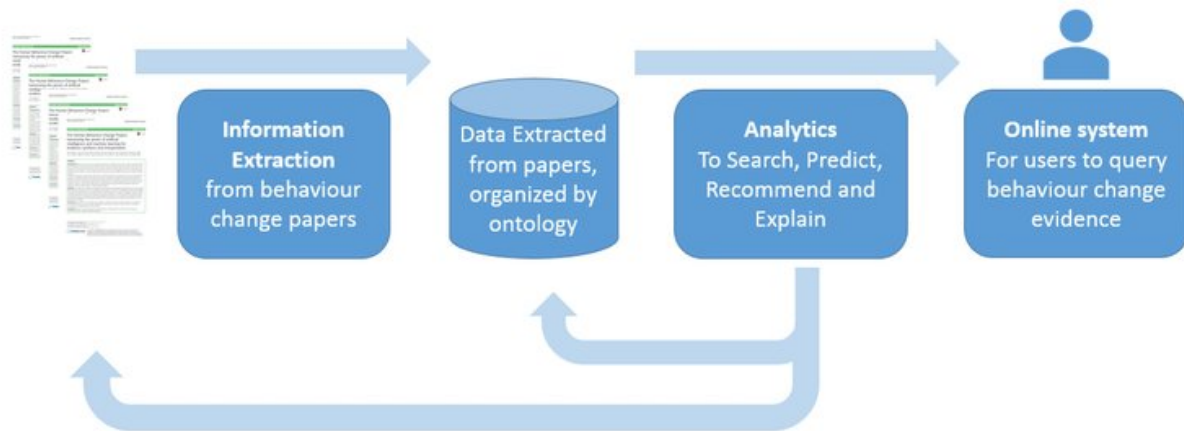
Making sense of this complex evidence in behaviour change is now beyond the capacity of humans; we need computers to help. To this end, we have created the [Human Behaviour Change Project](#), a collaboration between UCL, University of Aberdeen, University of Cambridge and IBM.

The project's aim is to develop a free, online system that people can use to query the global evidence on behaviour change. The system is being developed in [three phases](#).

## **Phase one**

For the initial phase, behavioural scientists are entering what they know about behaviour change interventions into computers. They are extracting the key aspects of published [intervention](#) studies to input into and train the artificial intelligence system. For example, the scientists will identify in the paper who the study participants were (for example, male, overweight smokers) and how the intervention was delivered, such as group or face-to-face sessions.

The scientists are also developing a standardised vocabulary to describe key concepts and the relationships between them. This is known as an [ontology](#). It helps to guide how the key information from the papers is organised.



Stages of development in the Human Behaviour Change Project.

For phase one, the focus is on extracting information on smoking cessation and physical activity. This will be extended to diet and alcohol consumption in future years.

## Phase two

In the following phase, computer scientists will use the manually extracted information to develop machine learning algorithms (a type of [artificial intelligence](#)). These algorithms work to search, predict, recommend and explain features of behaviour change interventions. As more manually coded research papers are added to the knowledge system, the algorithms will become more accurate and reliable.

Over time, as the algorithms improve, we will test how accurate the system is at automatically extracting this information. Usually, humans organise evidence according to subjects, such as psychology and public health. They are also very slow at extracting and synthesising this

evidence. Computers don't have disciplinary biases and can operate with large volumes of data and at speed. This allows previously unnoticed associations to be detected and new insights to emerge.

## Phase three

For the third [phase](#) of the project, we will create an online interface to make this behaviour change information easily accessible. And, as the project develops, collaborations with other research teams will enable more questions to be addressed. This collaboration is essential, as no single research team will be able to solve this complex problem alone.

If all goes to plan, we will launch the system in 2020. The system will hopefully lead to policymakers, psychologists, GPs and other specialists using the most effective methods to help people change their [behaviour](#) and lead healthier lives.

This article was originally published on [The Conversation](#). Read the [original article](#).

Provided by The Conversation

Citation: New AI system will help us discover the most effective behaviour change strategies (2018, August 16) retrieved 26 April 2024 from <https://medicalxpress.com/news/2018-08-ai-effective-behaviour-strategies.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--