

Introduction

This module is part of the Behaviour Change Intervention Ontology (BCIO) online training programme whose purpose is to help potential users of the ontology to understand what it is, how it works, how to use it in their research, and for those who are interested, how to develop and improve it.

This module provides a broad overview of the BCIO, what it includes, what information it contains, and how to access it.

This module consists of 1 video of 12 minutes in duration.

Here is a link to the video: <https://youtu.be/32qWcUNu-nM>

Prior training

Before doing this module you are advised to view:

1. Module 1 (What are ontologies and why are they useful?) and
2. Module 2 (How can ontologies be used in behavioural science?).

Learning objectives

After the training you should be able to:

1. Describe the scope of the BCIO.
2. Describe key information it contains about each entity.
3. Access the BCIO using one of the available portals.

Notes and explanations

The BCIO is an ontology that aims to cover everything one might wish to say about a **behaviour change interventions scenario** and its **evaluation**:

1. Behaviour change intervention scenario

- a. Behaviour change intervention content, delivery and tailoring
- b. Behaviours that may be targeted by interventions
- c. Engagement with interventions
- d. Populations that may be targeted by a behaviour change intervention
- e. Settings and temporal contexts in which interventions may be located
- f. Mechanisms of action by which interventions may have their effect on behaviour

2. Research study methods and reporting

- a. Evaluation studies
- b. Evaluation findings
- c. Evaluation reports

Each entity in the ontology has the following information. These are represented as column in the tables representing the ontology. The table below lists the core fields and provides a description of each one.

ID	The unique identifier for the entity. (e.g., BCIO:003000)
Label	The label for the entity, which is unique within the ontology. (e.g., behaviour change intervention)
Definition	The formal ontological definition which takes the form of: [Parent class] [differentia] so that the parent class is always clearly specified and then followed by the attributes of the entity that distinguish it from other sibling classes. (e.g., An intervention (parent class) that has the aim of influencing human behaviour (differentia).)
Informal definition	Where required, an informal definition that is easier to read, even though it may not be quite as precise.
Logical definition	Some entities are precisely specified as what are known as 'logically defined classes' or just 'defined classes'. These may be a conjunction of two other classes or some other combination of classes.
Definition source	Where appropriate this field tells users of the ontology about one or more sources (e.g. dictionaries) that were used to help arrive at the definition.
Parent	This is the immediately higher class in the semantic hierarchy. All entities must have this so that a family tree can be traced all the way up to the entity 'Thing' in Basic Formal Ontology. (e.g., planned process)
BFO entity	This is the Basic Formal Ontology entity of which this entity is a descendent. Including this tells users of the BCIO in broad terms what kind of a thing every entity is; e.g. whether it is a 'process' or an 'object' or a 'disposition'. (e.g., process)
Sub-ontology	This is the component ontology within the BCIO that contains the entity. (e.g., Upper level BCIO)
Curator note	This is an optional field that is used to explain why a particular definition or label was used.
Synonyms	This optionally provides one or more synonyms of the entity separated by semicolons. It is useful for searching the ontology.
Cross reference	This optionally provides a URL to a related construct our source of a construct.
Comment	Sometimes known as 'Elaboration' in other ontologies, this optionally expands on the definition to help clarify it. Definitions should be as concise as possible but sometimes this means that users of the ontology are not fully clear what is referred to. This field addresses that issue.
Examples	This optionally helps users of the ontology by showing how the entity has been used.
Fuzzy set	This field indicates when an entity has indeterminate boundaries. The aim is to flag it formally so that anyone using the ontology knows that they have to operationalise this construct when they use it. For example the entity 'adolescent' is useful and frequently used but flagged as fuzzy so help ensure that anyone using it in research specifies the age range that it refers to.
Why fuzzy	This field should be completed for any fuzzy sets to make sure that users understand why it is being declared as such.
Curator	This field provides the initials within the HBCP team of the person or people who are responsible for overseeing the entity entry.
Curation status	The options are: Proposed, To be discussed, Discussed, Published, and Obsolete. Entities that are published are automatically put on the Qeios publishing platform with doi numbers.
To be reviewed by	This is for internal use in the development of the entity.
Reviewer query	This is for internal use in the development of the entity.

In addition, entities may have field that have the form REL 'xxx' where the xxx refers to specific relationship with another entity. For example, If there is a field REL 'part of', the this column will contain the labels of entities in the ontology of which the current entity is a part.

Links to resources

HBCP website: <https://www.humanbehaviourchange.org/>

BCIO website: <https://bciontology.org>

BCIO Search website: <https://bciosearch.org>

Ontology Lookup Service: <https://www.ebi.ac.uk/ols/index>

Qeios publishing platform: <https://qeios.com>

Twitter: @HBCProject

Publications: <https://wellcomeopenresearch.org/collections/humanbehaviourchange>

Open Science Framework: <https://osf.io/efp4x/>

Github: <https://github.com/HumanBehaviourChangeProject>