

## Critically exploring psychology



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# Introduction

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This free course introduces you to critical thinking as a tool for psychology. As you work your way through the course you will learn what critical thinking is, and why it is important to use in the study of psychology. In particular, it will help you to think about how to use it when doing independent research.

The course is divided into five separate sections that will introduce you to some of the materials that are used on The Open University Psychology MSc Conversion Qualification, *Critically exploring psychology*.

As you explore these sections, you will get some sense of how psychologists need to be critical in order to strengthen their psychological research, not just in terms of the topic of interest to them, but also in terms of the differing approaches and research methods that they use to study their topic of interest. The whole course will take about three hours to complete.

This OpenLearn course is an adapted extract from the Open University courses [D810 \*Critically exploring psychology 1\*](#) and [D811 \*Critically exploring psychology 2\*](#).

# Learning Outcomes

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After studying this course, you should be able to:

- recognise that there are differing perspectives in psychology
- understand how psychologists think about the design of their research and the methods used
- appreciate where and how to find out more about how to critically explore as a psychologist
- understand the importance of critical thinking in psychology and research.

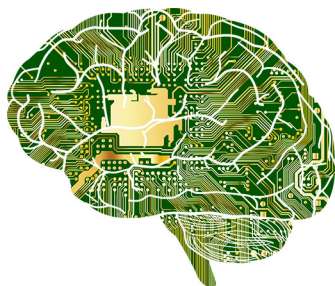
# 1 Different schools of thought in psychology

Psychology as we know it today is a far-ranging and diverse field with many sub-disciplines and specialist areas. It is represented in the British Psychological Society by 11 specialist divisions and 19 specialist sections, and in the American Psychological Association by 54 specialist divisions.

The following sections will give you a brief overview of five specific areas of psychology: cognitive, social, developmental, biological and individual differences.

## 1.1 Cognitive psychology

Cognitive psychology is an approach to human thinking that has been inspired by the development of computers in the 20th century. The British mathematician Alan Turing was responsible for the argument that if machines perform in ways which are indistinguishable from humans then they must be deemed intelligent. This inspired many psychologists to investigate the thinking mind. Cognitive psychologists often propose models for behaviours that take the form of interconnected 'boxes in the brain'. These models aren't designed to identify where in the brain a particular behaviour or action derives from; rather they attempt to identify how incoming information is (or is not) processed.



**Figure 1** Cognitive psychology has been inspired by the development of computers

The area of cognitive psychology also includes the study of language, attention, perception and memory.

## 1.2 Social psychology

Social psychologists are interested in the interaction between individual psychological processes and the broader contexts in which they unfold. This includes phenomena such as collective norms and values, relations between groups, conflict and cooperation, social attitudes, and political ideologies. Understanding how these broader social factors shape individual behaviours gives social psychology its character.



**Figure 2** Social psychology considers how people interact with others

At the centre of social psychological research is the interaction between the influence of wider social factors that shape how we understand the social world (i.e. group dynamics, situational pressures and so on), and the cognitive processes through which we perceive and organise information about the social world (i.e. emotions and motivations) that shape our reactions to others.

## 1.3 Developmental psychology

Developmental psychology is concerned fundamentally with how individuals change over time. This requires them to move beyond synchronic ‘snapshots’ of human psychology in order to explore the lived experience and psychological functioning of individuals across their entire lifespans.

From the time of Darwin’s first publication on his own child, children have been central to psychology. One of the most influential developmental psychologists was Jean Piaget, who was a keen observer of children. His work imagined the child to be a little bit like a scientist trying to figure out how the world works.



**Figure 3** Developmental psychology considers how individuals change over time

Recently, developmental psychology has moved increasingly beyond its traditional focus on child psychology to explore psychological development across the entire human lifespan.

## 1.4 Biological psychology

Biological psychologists look at the physiology of the human body and brain in order to answer questions about the behaviours we exhibit. They investigate how the central nervous system and hormones function to affect behaviour, and how different behaviours, such as drinking alcohol, taking drugs or exercising, can affect us both internally and externally in the behaviours we exhibit.

Biological psychologists also focus on neurological data and investigate the contribution of different brain areas, or communication between areas, to particular behaviours. In comparison to cognitive psychology, the biological approach to research has been around for many years.



**Figure 4** Biological psychology considers how the central nervous system and hormones affect behaviour

In the last 30 years, biological approaches have become far more central to psychology because of the growth and availability of technology. In particular, functional magnetic resonance imaging (fMRI) examines blood flow to infer which areas of the brain are actively processing information during specific tasks.

## 1.5 Individual differences

This final area of psychology takes a slightly different approach to the others presented so far in Section 1 and represents a curious status as a discipline in psychology. In much of psychology, we are interested in how people are similar to one another: how is memory structured, how do people behave in groups, how does understanding of language develop? However, there are many ways in which individuals differ from each other: intelligence, personality, mood and motivation, to name but a few.

Research in many areas of psychology looks at groups of participants. However, this final area, looks at the systematic investigation of individual differences in research. This includes personality, intelligence and attitudes.



**Figure 5** The differences, rather than similarities, between individuals is looked at in this area of psychology

From reading about these five areas of psychology, it might become clear that psychological research is sometimes qualitative (uses text-based data) and sometimes quantitative (uses numbers). One way is not better than the other, but is determined by good critical evaluation of the questions, what do I want to achieve and why? In the

following sections you will start to understand how to ask the right questions in order to determine how research could be carried out.

## 2 Critical thinking in psychology

The central task for psychology is to try to explain human behaviour and experience; that is, to explain all the things that people do, think, feel and say. However, psychology is not restricted to human behaviour; it includes non-human animals in its field of study too. But human and non-human behaviour and experience are amazingly diverse and frequently complex. Consequently, researchers in psychology have developed a wide range of different methods to help them understand this vast topic. Indeed, of all the human and social sciences, psychology probably uses a bigger variety of research methods than any other discipline.

Within the field of psychology, it is important to engage in some critical evaluation of the methodology and methods that can be used. At the very least, psychologists need to identify some strengths and limitations of their research.

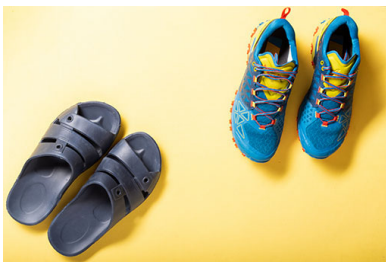
In other words,

- how do I know what I know?
- what approach can be used to get there?
- what's the best approach to get there?

Strong research comes out of sustained critical reflexive evaluation of what you are doing. A piece of research in which the researcher does not show awareness of competing epistemological/ methodological perspectives (something you will look at in more detail in Section 3), and where they are insufficiently critical of their research, is likely not be considered as a strong piece of research. It is particularly important for researchers to engage in critical discussion about their epistemological and methodological commitments. Before this though, you will consider in more detail what critical thinking is.

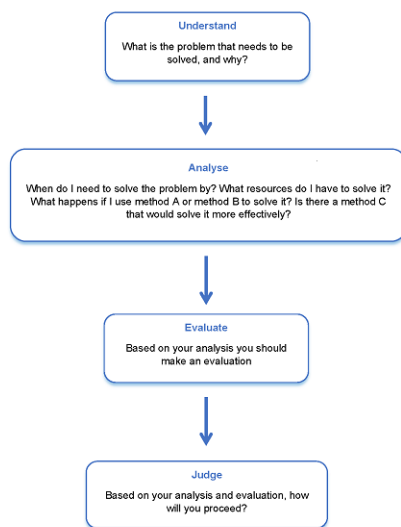
### 2.1 What is critical thinking?

Critical thinking is a form of making a judgement; it is not about being negative. It is something that most people do, daily, often with little awareness of the process they are going through. In simple terms, an example of everyday critical thinking is, I'm going hiking today, should I wear trainers or sandals? Critical thinking involves making an assessment of something, and then providing a critique of that position and putting forward new positions. For example, flip flops may be comfortable for the first part of the hike, in hot weather. However, the top of the mountain is rocky so a more substantial trainer might be needed to get to the summit and protect your toes.



**Figure 6** Deciding on the type of footwear needed for a hike is an example of everyday critical thinking

There are different stages to critical thinking, but they follow broadly similar steps. Firstly, you need to **understand** the issue at hand and the problem that is being faced or needs to be solved, and why? Secondly, it is necessary to carry out some form of **analysis** or collect some evidence about possible ways to understand the issue. For example, when do I need to solve the problem by? What resources do I have available to solve it? What happens if I use method A or method B to solve it? Is there a method C that would solve it more effectively? Thirdly, on the basis of the analysis, an **evaluation** is carried out, and finally a **judgement** is made about which way to progress. The advantages of working through these steps is that it widens thinking about a situation or issue, and opens up opportunities to different possible outcomes and solutions.



**Figure 7** Flow chart of the different stages of critical thinking

Elder and Paul (2012) describe a ‘well cultivated critical thinker’ as someone who:

- raises vital questions and problems, formulating them clearly and precisely
- gathers and assesses relevant information, using abstract ideas to interpret it effectively
- comes to well-reasoned conclusions and solutions, testing them against relevant criteria and standards
- thinks open-mindedly within alternative systems of thought, recognising and assessing, as need be, their assumptions, implications, and practical consequences; and
- communicates effectively with others in figuring out solutions to complex problems.

## Why is critical thinking important to psychology and research methods?

Critical thinking enables the researcher to go through the process of recognising their assumptions, challenging them and looking at possible other ways to do something.

In applying critical thinking to research, you will understand that there are different types of research questions; and that these different types of questions require different types of research designs (and consequently different methods) to answer them. If the question

and the design do not correspond, then the conclusions that are made about the research are likely to be questionable at best, and probably wrong.

Now you have a better understanding of what critical thinking is, you will move onto look at a framework for developing research questions.

## 3 Ontology, epistemology and methodology

In all areas of psychology and across all disciplines, the way you study the subject really matters. It is important that you evaluate the work you do, the evidence you offer, and the claims that you make.

### Activity 1

Think about the following:

- What happens when you learn a language, fall in or out of love, suffer a brain injury, or experience prejudice and hatred?
- How do people behave in private, and why might they behave differently in groups?
- What makes one person compassionate while another appear uncaring?
- Why do people have phobias? How would you help a child overcome a fear of the dark?
- Why are some people good at maths, but others are good at music?
- What makes a joke funny, or some memories more important than others?

What other questions might psychologists have? Think about all of the different ways that the question could be asked, and how this might guide what steps you take to answering it.

*Provide your answer...*

There are so many very different kinds of questions that psychologists need to try to answer. Consequently, there are many different methods for doing so. But how do you know which is the right or best method to use? There is no right way; much depends on the perspective that the researcher is coming from.



**Figure 8** A different perspective of the same image

Researchers (whether they work within psychology or any other discipline) always work on the basis of particular sets of theoretical assumptions. These theoretical assumptions can sometimes be implicit and shaped by the values accepted within a particular society, culture and during a particular time in history. They can be referred to as a 'paradigm' or a way of framing what we know, what we can know and how we can know it.

To better understand these broader frameworks within which psychological research is conducted, it is important to introduce a few key definitions.

### Key definitions

- *Ontology*: is the philosophical study of being. It refers to your view of reality and to what extent it exists 'out there', to be captured through research. Ontology is concerned with what is true or real.
- *Epistemology*: is the 'theory of knowledge'. It refers to the principles of what can be known and how you can know it; that is, how you can find out about it.
- *Methodology*: is the 'theory of methods'. It refers to the overall theoretical rationale and the principles that define how a research question, set of methods and data are embedded within a perspective.
- *Methods*: are the tools and techniques that you use for gathering and/or analysing data
- *Data*: is what you gather when you apply a method. Data can come in any shape or form, it can refer to behaviour, inner experiences, material or symbolic data.

You will now focus on two specific frameworks, positivism and constructivism, and see how ontology, epistemology and methodology apply to them.

## 3.1 Positivism and constructivism

The framework most often associated with science is perhaps positivism. Positivism is guided by the principles of objectivity and deductive logic. The ontological view of positivism is that there is a single truth or reality 'out there'; a researcher's task is to seek to identify 'the truth'. In other words, the ontological view feeds into the epistemology. There is a single truth (about particular human behaviour) which you can then objectively measure by creating reliable and valid tools. To objectively measure it, and thereby generate common laws of human behaviour, you must ask questions that allow you to gather data which either proves or disproves theoretical assumptions. You must ask questions that are falsifiable.

Constructivism, in contrast, does *not* assume that reality is 'out there' or that it can be accessed objectively. Instead, the paradigm of constructivism assumes that reality needs to be interpreted and understood from the point of view of individuals themselves. Within this paradigm, you don't ask research questions that are right or wrong, but rather you ask questions that allow you to gather insights on how people interpret reality and why. This then often involves qualitative research methods, such as interviews.

In summary, doing psychological research isn't just about picking a particular method to use, or a type of data to work with, it is also about embracing a particular perspective towards reality and truth, and how these in turn inform what type of data you use to answer research questions. Critical thinking is required to do this, so in the next section you will look at how to put it into action.

## 4 How do I put critical thinking into action?

Let's say you were interested in studying the topic of happiness. How might you think about studying happiness?



**Figure 9** Happiness can be studied using different psychological disciplines

There are different ways to study the same thing. You might want to study happiness by looking at the influence of one factor on another. For example, does eating chocolate cause happiness? It may be a survey that collects lots of data to see whether there are links between factors. For example, do some personality traits lead to more happiness? Or it may be through detailed interviews capturing the experience of feeling happy.

### Activity 2

You'll now revisit the different psychological disciplines that were introduced in Section 1 and think about how these different areas might shape the type of issue you look at when studying happiness. How will the psychological discipline chosen alter the question you pose?

Complete Table 1 by filling out the second column with examples of specific issues you might explore when approaching the study of happiness from the five different psychological disciplines listed. The first row has been done for you as an example.

**Table 1** Different ways to study happiness

| Discipline             | Examples of what you might be looking at when studying happiness |
|------------------------|------------------------------------------------------------------|
| Cognitive              | Are optimistic people happier?                                   |
| Social                 | <input type="text" value="Provide your answer..."/>              |
| Biological             | <input type="text" value="Provide your answer..."/>              |
| Individual differences | <input type="text" value="Provide your answer..."/>              |
| Developmental          | <input type="text" value="Provide your answer..."/>              |

### Discussion

The completed table below shows examples for each discipline. Of course, you may have come up with other options.

**Table 1 Different ways to study happiness (complete)**

| Discipline             | Examples of what you might be looking at when studying happiness                                 |
|------------------------|--------------------------------------------------------------------------------------------------|
| Cognitive              | Are optimistic people happier?<br>Why are some memories happier than others?                     |
| Social                 | How do relationships with others affect happiness?                                               |
| Biological             | How do hormones influence happiness?<br>Where does happiness occur in the brain?                 |
| Individual differences | Does personality type influence happiness?<br>Can being creative improve my levels of happiness? |
| Developmental          | Do happy parents have happy children?<br>How does happiness change over the lifespan?            |

## 4.1 A positive or constructivist approach?

Continuing with the example of happiness, you'll now think about how you might tackle the same topic under the two different frameworks you have looked at in this course.

A positivist approach would formulate a research question that aims to uncover key principles that govern behaviour. For example, one such question could be 'What is the relationship between chocolate and happiness?'. Here researchers could draw on a survey study to measure the amount of chocolate eaten per day and measures of happiness. They would then look at the relationship between these responses among participants. They might find that more chocolate eaten is associated with higher levels of happiness.

A constructivist approach in turn would formulate a research question that is more open-ended. For example, one such question could be 'How do individuals experience the feeling of happiness?'. Here researchers could choose to design an interview study with an interview guide (a set of questions) that would ask about their subjective experience of happiness, examining individuals causes and feelings experienced during happiness. After collecting 20 interviews and analysing them, they might find that there are a lot of varied ways through which individuals experience happiness, different causes of happiness, as well as feelings about not being happy but seeing others experience happiness when they are not.

The table below shows how these possible research scenarios correspond to the key definitions given in Section 3 in a study of happiness.

**Table 2 One question from different approaches**

| Paradigm            | Positivist                                  | Constructivist                                                  |
|---------------------|---------------------------------------------|-----------------------------------------------------------------|
| <b>Ontology</b>     | Single reality – chocolate causes happiness | Reality is created by individuals – the experience of happiness |
| <b>Epistemology</b> | This can be measured                        | This is interpreted                                             |

|                    |                         |                     |
|--------------------|-------------------------|---------------------|
| <b>Methodology</b> | Survey                  | Discourse analysis* |
| <b>Method</b>      | Quantitative, measuring | Qualitative         |
| <b>Data</b>        | Statistics              | Text                |

\*Discourse analysis is the analysis of language and text use in its context.

To determine which approach is used requires a research question. You will look at how to develop a research question next.

## 4.2 Developing a research question

A research question is a carefully worded question stating precisely what a researcher is trying to find out in a study. It needs to be broad and possibly open-ended to enable exploration of the specific topic or issue.

Meltzoff and Cooper (2018) describe the different types of research questions and the need to understand these, as this sets up your expectations about how the research needs to be conducted. They suggest that once you have identified the type of question you are asking, you can then judge whether the research design you have is appropriate to the question. The different types of research question are shown in Table 3 below.

**Table 3 Different types of research questions**

| Type of question               | Description                                   |
|--------------------------------|-----------------------------------------------|
| Existence                      | Does x exist?                                 |
| Description and classification | To what extent does x exist?                  |
| Composition                    | What makes up x?                              |
| Descriptive-comparative        | Is x different to y?                          |
| Relationship                   | Is there an association between x and y?      |
| Causal                         | Does x lead to y?                             |
| Causal-comparative             | Does x cause more change in y than z does?    |
| Causal-comparative interaction | Does x cause change under certain conditions? |

### Activity 3

Interactive content is not available in this format.



So, trying to find out what makes people happy will use a different approach to finding out whether eating more chocolate leads to happiness. The former might require an interview with a small group of people to ask them what makes them happy; whereas the latter might require a large-scale survey or an experiment controlling the amount of chocolate they eat and measuring how happy they are.

The key message in carrying out any type of psychological research is that you use the right tool for the job at hand. In psychology, the job is defined by the research question. So, it's important to think about what the research question is trying to do, what the research is going to be and how it will be carried out.

How the question is phrased informs the decision as to what kind of methodology is used. This will, in turn, give ideas about what method would be appropriate for collecting that data, and what type of data is collected.

## 5 Criticality at different stages of research

Criticality is not only important at the start of research. It is important to recognise that criticality and critical thinking is relevant at all different stages of research and in different ways. At each stage you should use the same steps that you covered in Section 2 of this course (understand, analyse, evaluate, judge). Early on, when planning the research aims, question and methodology, a critical perspective is nurtured when you recognise that there are many methodological paths that could be taken.

During the research, you will read papers and articles written by other authors. It's important that you know of your own purposes and opinions as you read these items. Additionally, you need to be able to recognise the writer's purposes and opinions. You can find more about being a critical reader by visiting the OpenLearn course [How to be a critical reader](#).

At the data collection and interpretation stage, it's important to use critical thinking to ask questions like, 'Is there a better way of collecting a different type of data?', 'Have I analysed this correctly?', 'Is it biased or influenced by a broader social, political and scientific message it is designed to support?', 'Were there shortcomings in the method used to collect the data?', 'Have I interpreted it correctly?', 'Or has some form of misinterpretation taken place?'

Towards the end of the research, when writing up a project, it can be important to adopt a critical stance to the methodology used, the results collected and the interpretation of these findings. For example, could this have been done in a different way, and would it benefit from that now?

### Activity 4

What other questions could you ask about your research when adopting a critical stance?

*Provide your answer...*

### Discussion

It's important to be critical of the claims made by research. The time and context of the research can have a bearing on the interpretation of the findings and the same outcome might have a different relevance at a different point in time. For example, views about wellbeing and homeworking may be different since the onset of the COVID-19 pandemic.

Some types of analysis are influenced by reflexivity, or the researcher's role in what is studied and what conclusions are drawn. With any claims it is important to consider whether the researcher might be biased or influenced by a broader social, political and scientific (or even financial) message they are designed to support.

You might also consider whether there were shortcomings in the method that was used to collect the data; whether it has been interpreted correctly, or has some form of misinterpretation taken place?

It can help to invite others to evaluate research both from within their methodological frame and from outside (i.e. critiquing a qualitative study from a positivist and

constructivist perspective). In other words, if qualitative research has been out collecting information from in-depth interviews with a small number of people, would it be beneficial to carry out a different study using large scale survey responses?

When assessing the likelihood of any research claims you need to remember that research does not happen in a vacuum. They need to be contextualised and understood in the environment and climate in which they take place. While any type of data can tell us a lot, without common sense, context and interpretation, and a little bit of critical thinking, they mean nothing!

## Conclusion

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Having completed this course, you should now have a better idea of why psychologists need to be critical to strengthen their research, not just in terms of the topic of interest to them, but also in terms of the differing approaches and research methods that they use to study their topic of interest.

You should also have a better idea of the need to look at any topic from a different perspective, and how this might shape the way that psychological research is carried out.

This OpenLearn course is an adapted extract from the Open University courses [D810 Critically exploring psychology 1](#) and [D811 Critically Exploring Psychology 2](#).

## References

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Elder, L. and Paul, R. (2012) *30 Days to Better Thinking and Better Living Through Critical Thinking: A Guide for Improving Every Aspect of Your Life, Revised and Expanded*. New Jersey: Pearson Education.

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## Acknowledgements

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This free course was written by Katy Smith. It was first published in July 2022.

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