

ECDE7002

Session 6

16/11/23

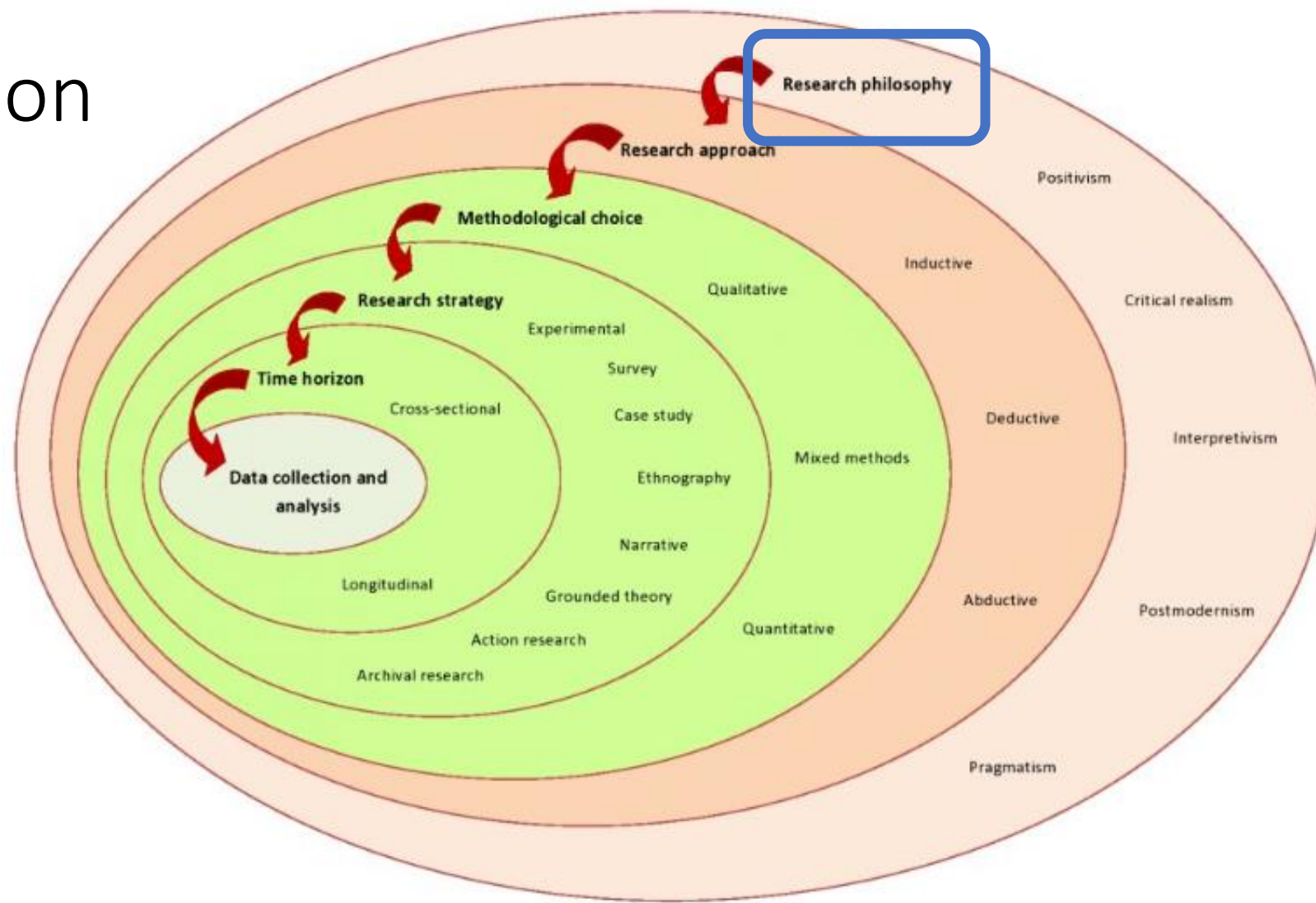


The Research Onion

Start from the outside and peel each layer away until you reach the core.

These layers are broken up into six main areas:

- research philosophy;
- research approach;
- research methodology choices;
- research strategy;
- time horizons;
- data collection techniques and analysis.



(Saunders et al., 2007)

Research Philosophy

- Research philosophy refers to the set of beliefs concerning the nature of the reality being investigated (Bryman, 2012).
- The choice of research philosophy is defined by the type of knowledge being investigated in the research project (May, 2011).
- Knowing the nature of reality is crucial to understanding how you make meaning of the data you gather.
- These assumptions help to orientate your thinking about the research problem, its significance, and how you might approach it so that you can contribute to its solution.
- It is usually examined in terms of ontology and epistemology.

Definitions



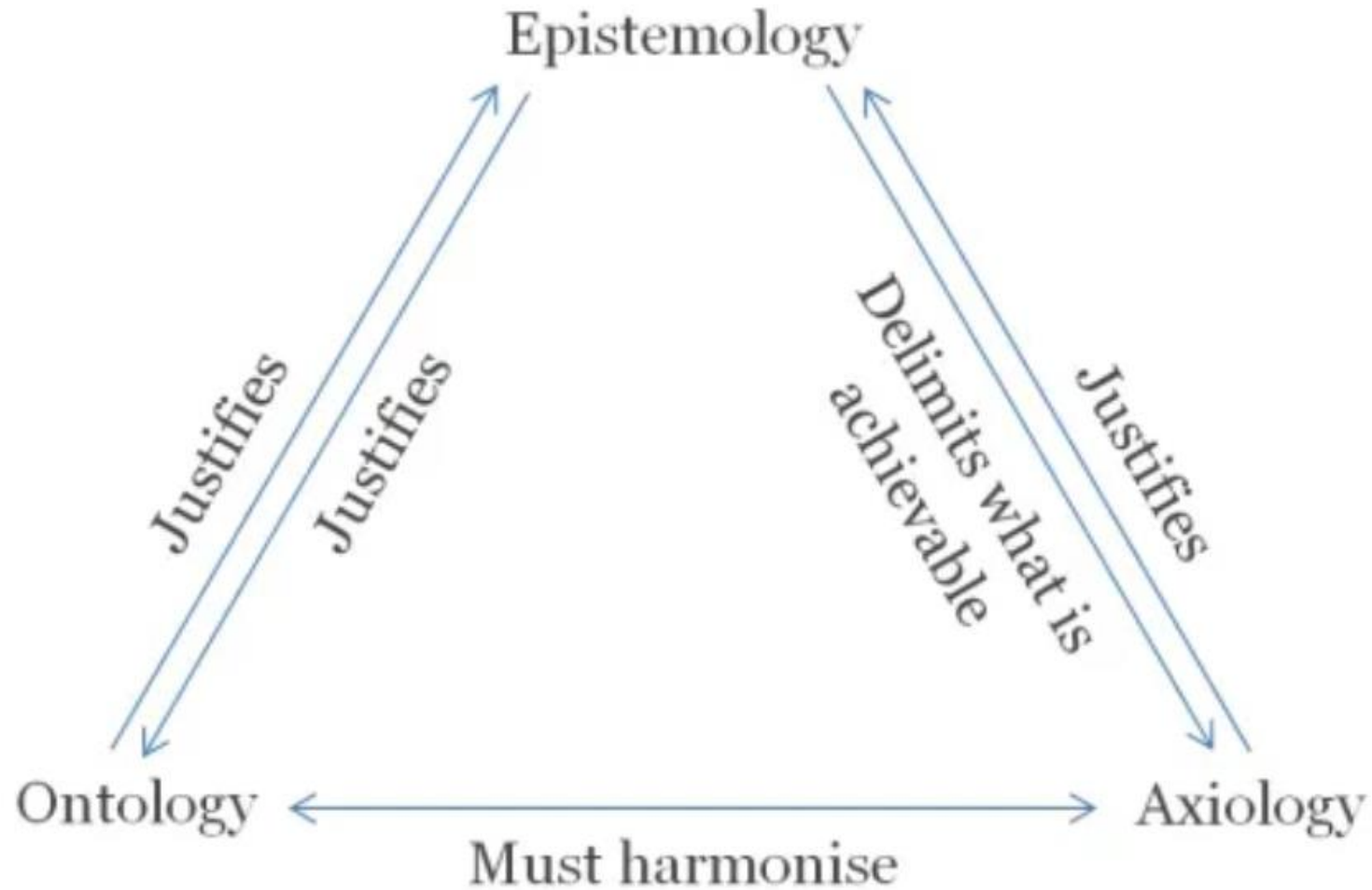
Ontology = the nature of reality and of what really exists



Epistemology = the relationship between the knower and what is known

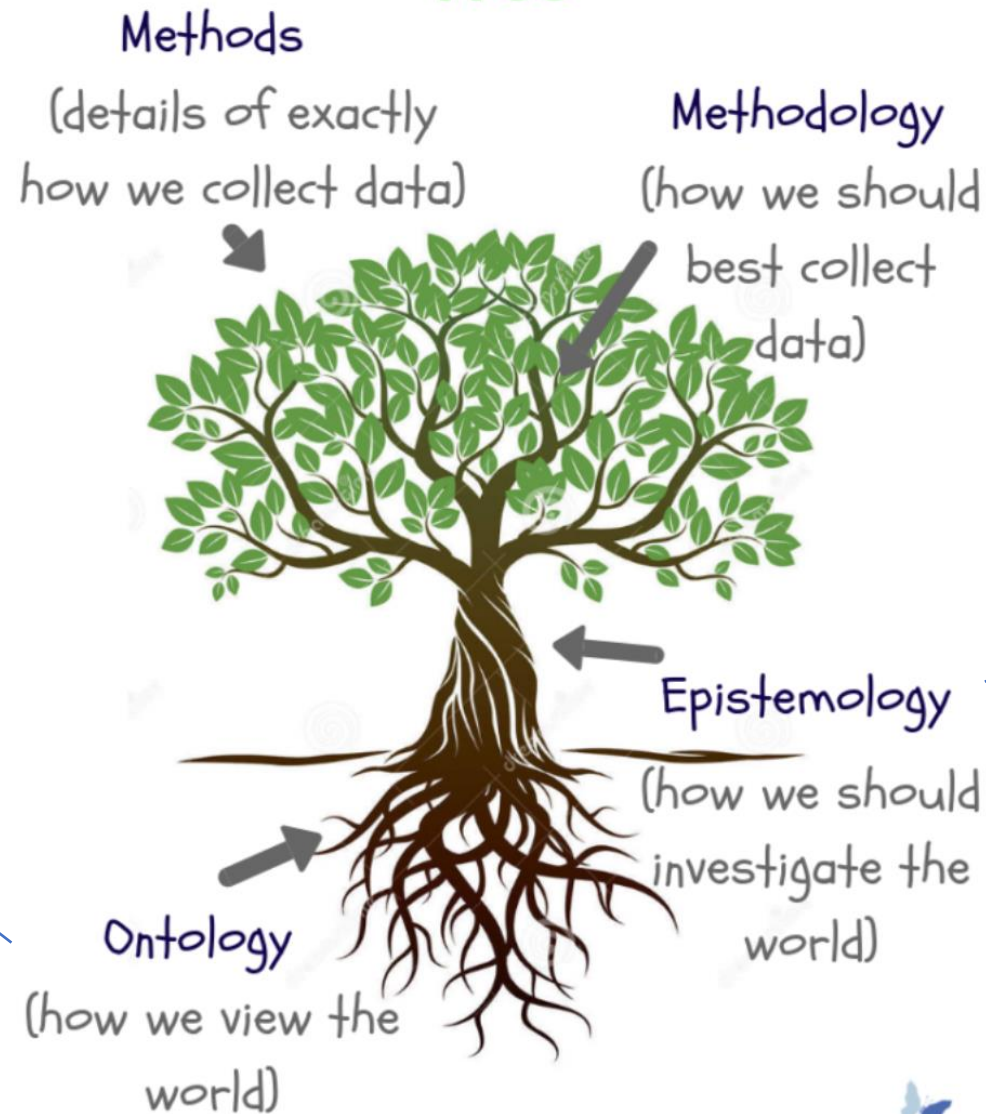


Axiology = what we value



Paradigmatic commitments in the macrostructure of science (from Patterson and Williams 1998: 286, as adapted from Laudan 1984)

Research Methodology Tree



Ontology:

What constitutes 'reality'?
How can we understand existence?

Epistemology:

What constitutes 'valid knowledge'?
How can we obtain it?

Ontology in real life



What is time?



Are my feelings real?



What is 'nothing' and
does it exist?

Ontology...

- is the study of **being** -
...of how we determine if things exist or not. It attempts to take things that are abstract and establish that they are, in fact, real.
- helps researchers to recognise how certain they can be about the nature and existence of objects they are researching.

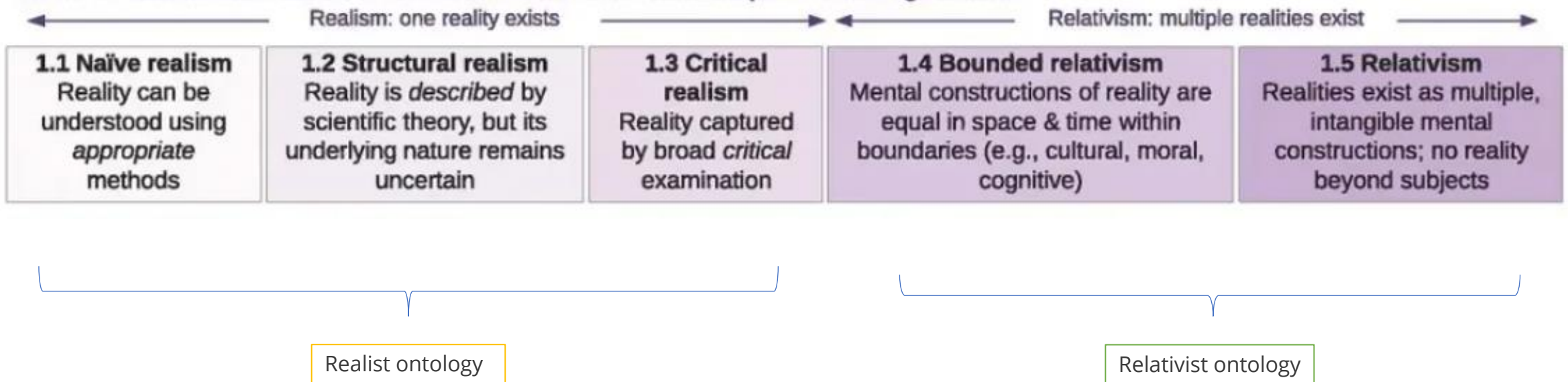
For example:

- what 'truth claims' can a researcher make about reality?
- who decides the legitimacy of what is 'real'?
- how do researchers deal with different and conflicting ideas of reality?

Ontology

Moon & Blackman (2017)
[A guide to ontology, epistemology, and philosophical perspectives for interdisciplinary researchers – Integration and Implementation Insights \(i2insights.org\)](#)

1.0 ONTOLOGY: What exists in the human world that we can acquire knowledge about?



Realism v. Relativism

Realist ontology:

- relates to the existence of one single reality which can be studied, understood and experienced as a 'truth';
- i.e. a real world exists independent of human experience.

Relativist ontology:

- based on the philosophy that reality is constructed within the human mind, such that no one 'true' reality exists.
- Instead, reality is 'relative' according to how individuals experience it at any given time and place.

the relationship between the
knower and what is known

Epistemology

Understanding how we come to know that something is the case,
whether or not it is a matter of fact;
e.g. 'the Earth is warming'.

Epistemology...

- is the study of **knowledge**.
- is concerned with all aspects of the validity, scope and methods of acquiring knowledge.

For example:

- a) what constitutes a knowledge claim;
- b) how can knowledge be acquired or produced;
- c) how the extent of its transferability can be assessed. Epistemology is important because it influences how researchers frame their research in their attempts to discover knowledge.

Epistemology

Subject = the researcher
Object = the thing being researched

By looking at the relationship between a 'subject' and an 'object', we can explore the idea of epistemology and how it influences research design.

2.0 EPISTEMOLOGY: How do we create knowledge?

2.1 Objectivism

Meaning exists within an object: an objective reality exists in an object independent of the subject

2.2 Constructionism*

Meaning created from interplay between the subject & object: subject *constructs* reality of object

2.3 Subjectivism

Meaning exists within the subject: subject imposes meaning on an object

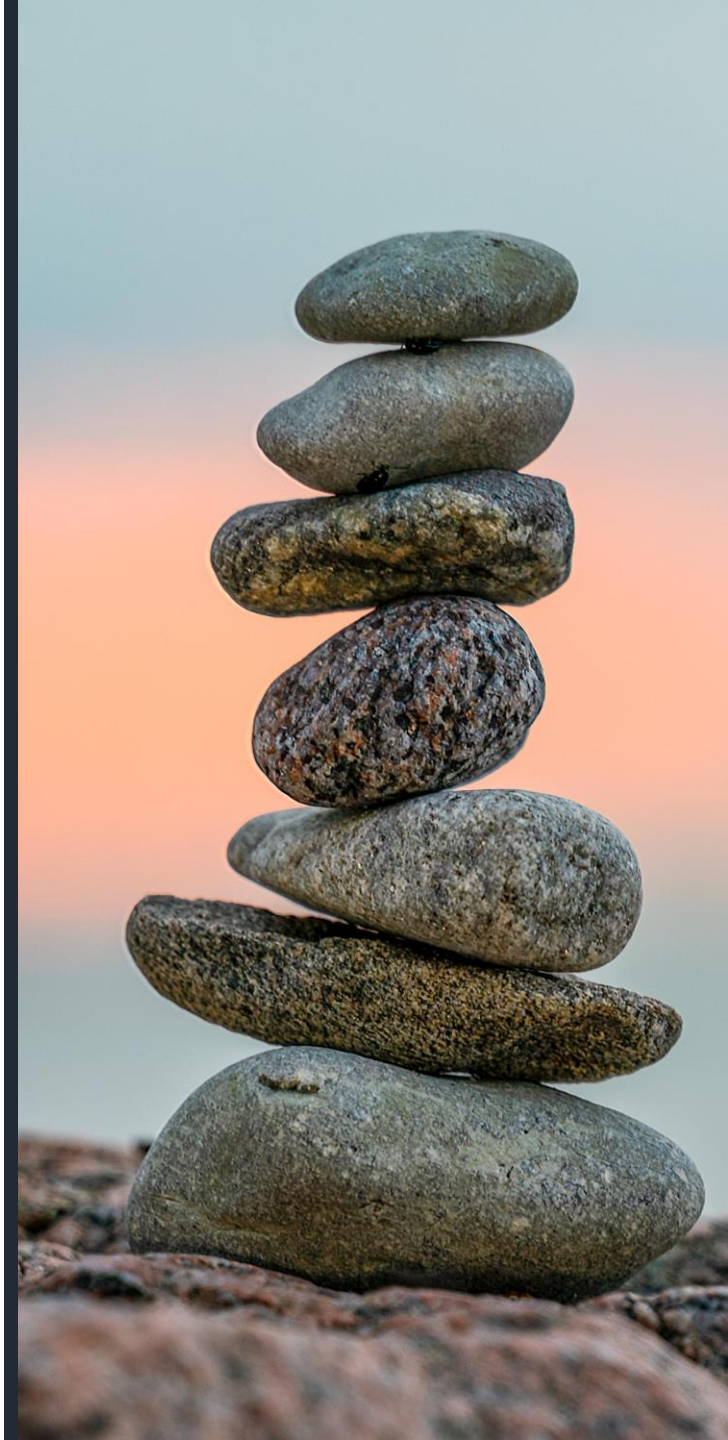


Objectivism

Objectivist epistemology assumes that reality exists outside, or independently, of the individual mind.

Objectivism holds that the world is full of facts - that each thing is itself; e.g. a chair is a chair, a rock is a rock.

This is a regardless of what we think about them or each person's experience with them.



Objectivism

If I call a rock a cat, that does not change its fundamental nature. It is still a hard, grey lump of natural matter. I can only consider it in terms of its attributes.

Even if I want it to be a cat, there's no evidence that it is one so it cannot be one.

Objectivists believe that there is a reality to be observed and that observers who look at the same phenomenon will basically agree on its existence and its characteristics.



Subjectivism

Subjectivist epistemology relates to the idea that reality is shaped to fit the purposes of individuals and interpret it in a way that makes sense to them.

The value of subjectivist research is in revealing how an individual's experience shapes their perception of the world.

Subjectivism holds that our existence does not have identity until I experience it.



Subjectivism

The rock you see is not necessarily the same rock that I see. It does not exist until we perceive it.

One person says: "Oh, look at that ugly rock." Another says: "Look at that wonderful specimen of sedimentary geology!"

Subjectivists would argue they are effectively looking at two different rocks.



Constructivism

Constructionist epistemology assumes that knowledge is a human product and is socially and culturally constructed.

Individuals create meaning **through their interactions with each other and with the environment** in which they live.

The value of constructionist research is in generating contextual understandings of a defined topic or problem.

Constructivism holds that all knowledge builds upon prior knowledge and that people actively make their own knowledge.

Constructivism

The rock is a rock because we have learnt to see it as one.

www.youtube.com/watch?v=EbaOR8ahoSM&t=18s



Axiology

Axiology is the philosophical study of value.

It helps you learn how valuables and opinions impact the collection and analysis of your research.

Makes one understand the impact that people's opinion have on collecting and analysing of research. It helps you to understand that people's opinion matters a lot while carrying out research (Silverman, 2013).

A close-up photograph of a red pushpin with a black stem, pinned to a yellow and white map. The map shows some text like 'PACOT SQUARE' and 'SQUARE'. The image is partially obscured by a white curved shape on the right side of the slide.

Useful video

www.youtube.com/watch?v=hkcqGU7I_zU&t=97s

Theoretical Perspectives

3.0 THEORETICAL PERSPECTIVE: What is the philosophical orientation of the researcher that guides their action/research?

Knowledge acquisition is deductive, 'value-free', generalizable $\longleftrightarrow$ Knowledge acquisition is inductive, value-laden, contextually unique

Application: to predict

3.1 Positivism

Natural science methods (posit, observe, derive logical *truths*) can be applied to the social sciences

3.2 Post-positivism

Multiple methods are necessary to identify a *valid* belief because all methods are imperfect

3.3 Structuralism The source of meaning comes from the formal structure found in language & can apply to all aspects of human culture

Application: to understand

3.4 (Social) Constructivism Meaning making of reality is an activity of the individual mind

3.5 Interpretivism Natural science methods cannot apply to social science; interpretations of reality are culturally derived & historically situated

3.5a Hermeneutics

Hidden meaning (of language) exists in texts, practices, events & situations, beneath apparent ones

3.5b Phenomenology

The essence of human experience of phenomena is only understood when the researcher separates their own experiences

3.5c Symbolic interactionism

The researcher must take the position of those researched (interaction) by sharing language & other tools (symbols)

Application: to emancipate or liberate

3.6 Critical theory Research & theory should be used to change situations (focuses on power relations, critiques assumptions & evolves)

3.6a Emancipatory

The subjects of social inquiry should be empowered

3.6b Advocacy or participatory

Politics & political agendas should be accounted for

3.6c Feminism

The world is patriarchal & the culture it inherits is masculine

Application: to deconstruct

3.7 Post-structuralism Different languages & discourses divide the world & give it meaning

3.8 Post-modernism Truth claims are socially constructed to serve interests of particular groups, methods are equally distrusted; might not be possible to arrive at any conclusive definition of reality

Application: any or all

3.9 Pragmatism All necessary approaches should be used to understand research problem

Positivism

Positivism comes up with research questions and hypotheses that can be evaluated and analysed. Common knowledge of the world can be **measured** and explained using Positivism.

Positivism uses research questions **that can be tested**. It helps you find explanation by using the generally accepted knowledge of the people.

Positivism = if something is not measurable, it cannot be known for certain.

Positivists believe that, to be valid, research must be:

- Linear
- Objective
- Generalisable

www.youtube.com/watch?v=mbof5Fyiw8U

Positivism

Do you think that research in education can be positivist?

<https://research-methodology.net/research-philosophy/>



**Qualitative
Methods**

Interpretivism,
Constructivism,
Exploratory Research



**Quantitative
Methods**

Positivism, Deductive
Logic, Confirmatory
Research

Interpretivism

Interpretivism is based on the assumption that reality is subjective, multiple and socially constructed.

i.e. we can only understand someone's reality through their experience of that reality, which may be different from another person's reality that has been shaped by the individuals' historical or social perspective.

Interpretivism

Do you think that research in education can be interpretivist?

www.youtube.com/watch?v=oULEWzJHc-I

Interpretive approaches rely on questioning and observation in order to discover or generate a rich and deep understanding of the phenomenon being investigated.

This is closely associated with qualitative methods of data collection.

Positivism versus Interpretivism - Limitations

Positivism

The data that it produces can be inflexible
It fails to address aspects such as personal beliefs, experiences and motivations.

Interpretivism

The researcher's subjectivity in

- data collection
- analysis

i.e. what I think may not be what you think. I might observe somebody to be upset and you might see them to be fine. We all see things differently.

Pragmatism

Attempts to find a 'middle ground' – focusing on the usefulness of research findings

This enables pragmatic researchers to conduct research in innovative ways to find solutions to research problems.

Pragmatic studies often seek to understand the multiple factors involved in people's actions in a given situation.

Pragmatists acknowledge that their inquiry **will not lead to certainty** because very little is certain.

Research Philosophy

Despite the inherent differences between these philosophical practices, one philosophy is not inherently better than the other, although researchers may favour one over the other (Podsakoff et al., 2012).

The philosophy simply provides the justification for the research methodology. The methodology should be informed by the nature of the phenomena being observed.

Research Philosophy

Pragmatism	Positivism	Realism	Interpretivism
Mixed-method OR Multiple-method	Highly structured Large samples Measurement	Methods chosen must fit the subject matter	Small samples In-depth investigations
Quantitative and qualitative	Quantitative (but can use qualitative)	Quantitative or qualitative	Qualitative

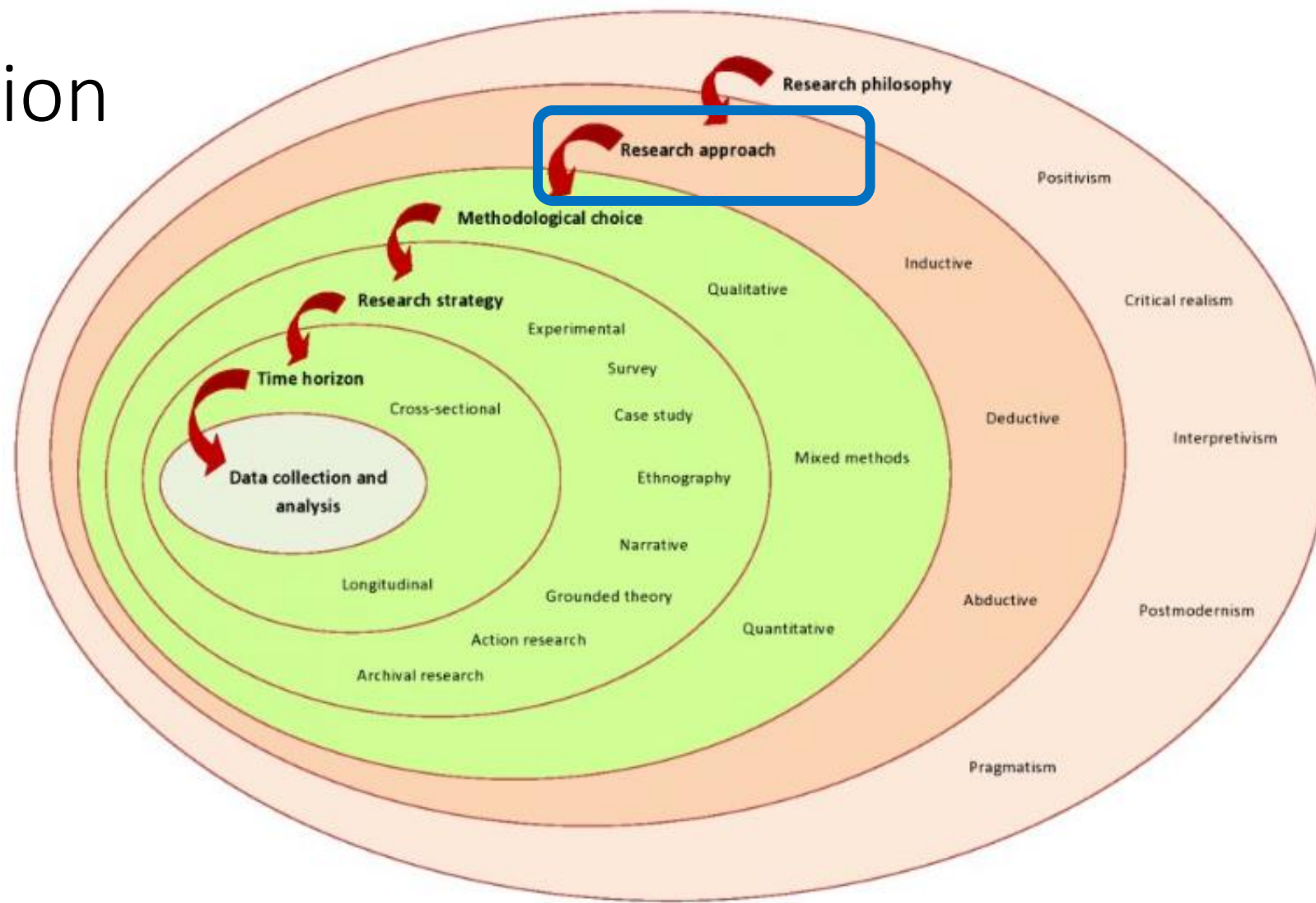


The Research Onion

Start from the outside and peel each layer away until you reach the core.

These layers are broken up into six main areas:

- research philosophy;
- research approach;
- research methodology choices;
- research strategy;
- time horizons;
- data collection techniques and analysis.



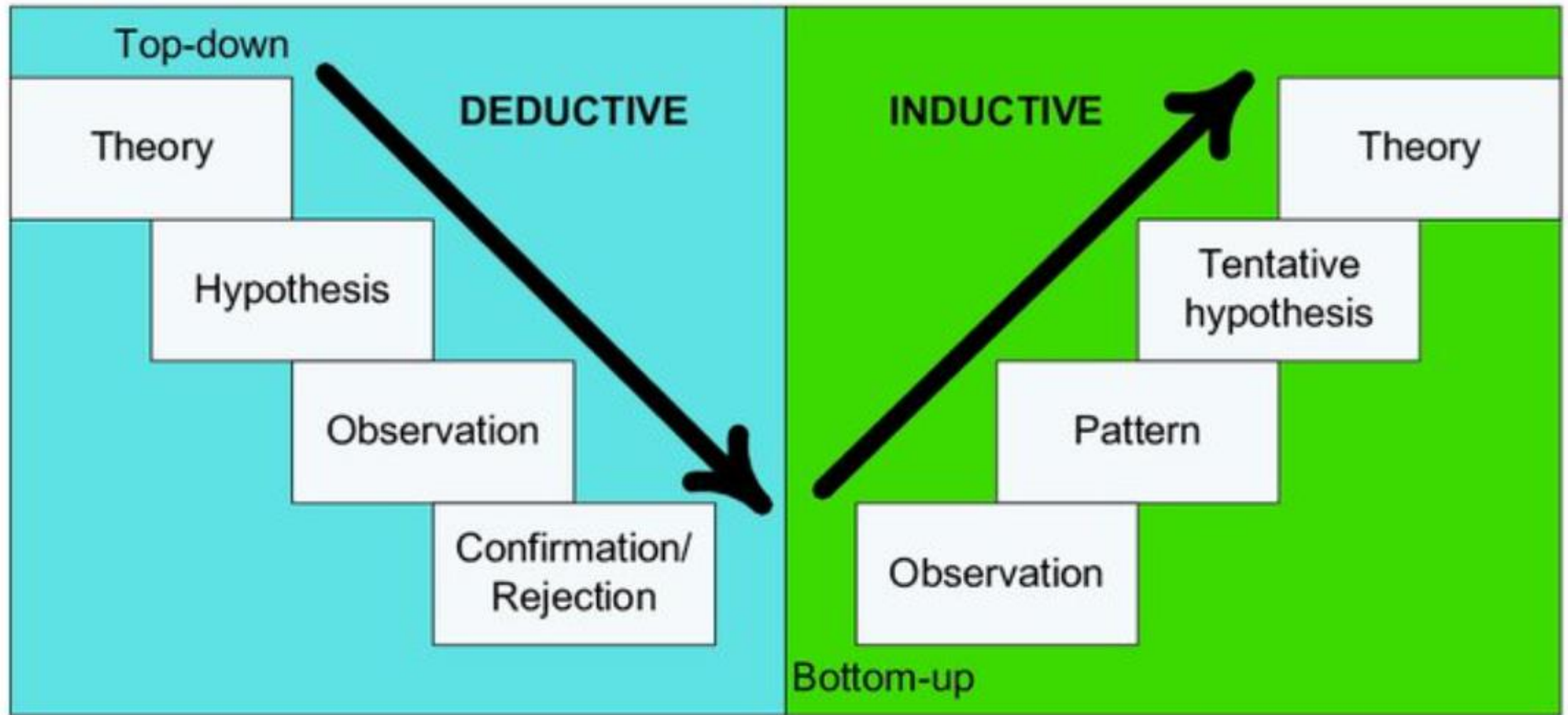
(Saunders et al., 2007)

Research Approach

This refers to the approach that the researcher takes;
Usually described as inductive, deductive or abductive;

Inductive reasoning aims at developing a theory.

Deductive reasoning aims at testing an existing theory.



Inductive approach

Allows for you to **create** a theory rather than adopt a pre-existing one.

There is no framework that initially informs the data collection and the research focus can thus be formed after the data has been collected (Flick, 2011).

Although this may be seen as the point at which new theories are generated, it is also true that as the data is analyzed that it may be found to fit into an existing theory (Bryman & Bell, 2011).

This method is commonly used for **qualitative** research.

e.g. Interviews may be carried out concerning specific phenomena and then the data may be examined for patterns between respondents (Flick, 2011).

However, this approach may also be used effectively within positivist methodologies, where the data is analysed first and significant patterns are used to inform the generation of results.

Deductive approach

Starts with a specific hypothesis or hypotheses that have been developed based on information or patterns that have been observed by the researcher. It then seeks to test this hypothesis and **develop a broader theory** from it.

Develops the hypothesis or hypotheses upon a pre-existing theory and then formulates the research approach to test it (Silverman, 2013).

Particularly suited to the positivist approach, which permits the formulation of hypotheses and the statistical testing of expected results to an accepted level of probability (Snieder & Larner, 2009).

Typically, a deductive approach is associated with **quantitative** research.

But...

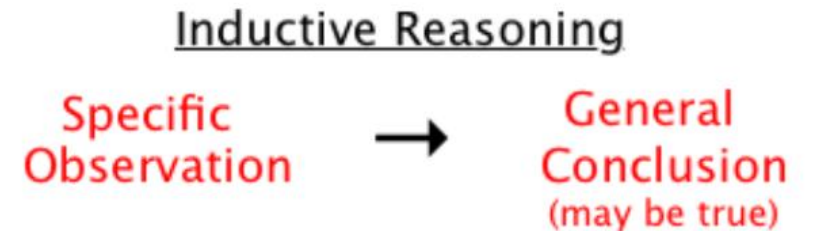
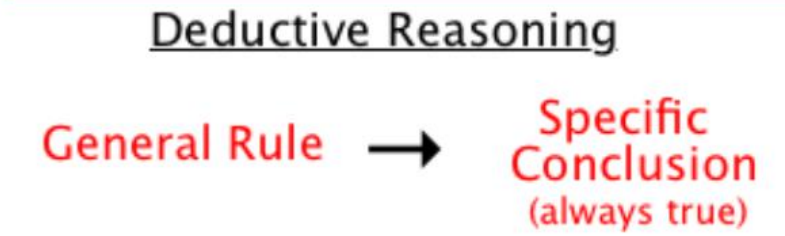
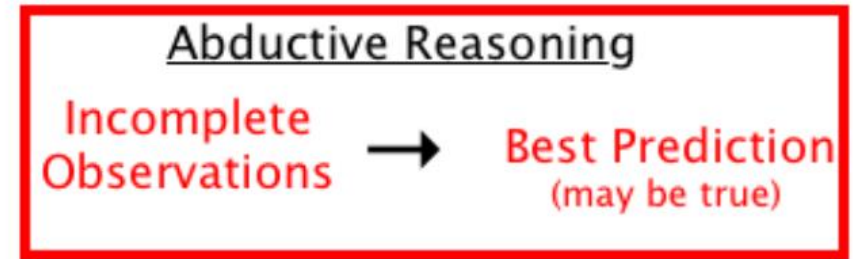
In qualitative research, a deductive approach could use a questionnaire which allows you to compare different understanding of the participants through empirical data. The data gathered helps to confirm or reject the question and the process can be repeated.

Abductive Approach

Typically begins with an incomplete set of observations and proceeds to the likeliest possible explanation for the set.

Abductive reasoning does its best with the information at hand, which often is incomplete.

The conclusion that is drawn is merely an 'educated guess' and is, therefore, not absolutely verifiable or true.



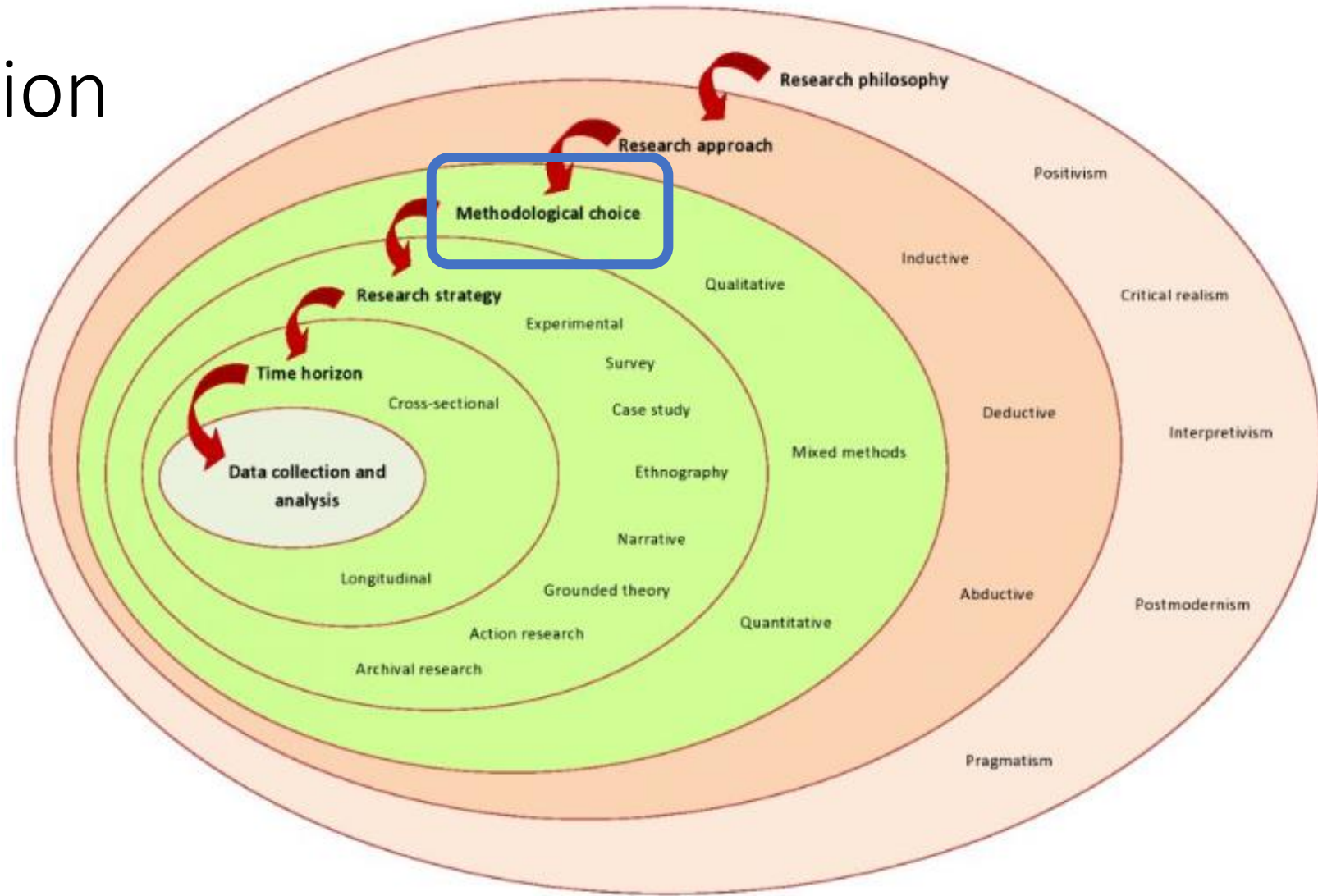


The Research Onion

Start from the outside and peel each layer away until you reach the core.

These layers are broken up into six main areas:

- research philosophy;
- research approach;
- research methodology choices;
- research strategy;
- time horizons;
- data collection techniques and analysis.



(Saunders et al., 2007)

Methodological Choice



Mono

Mixed

Multi

Mono-method

When using this method, you are required to gather one type of information; that is using **either** quantitative or qualitative methodology. You cannot combine the two.

Mixed-method

This method permits one to **combine quantitative and qualitative methodology** in a research to create a precise set of data.

The mixed method combines methods to create a single dataset.

(Flick, 2011)

Multi-method

This method is similar to the mixed method because the two combine quantitative and qualitative methodology.

Although they are similar, they have their differences.

While mixed method combines methodology to establish a particular set of data, multi-method does not.

The multi method is used where the research is divided into segments, with each producing a specific data set (Flick, 2011).

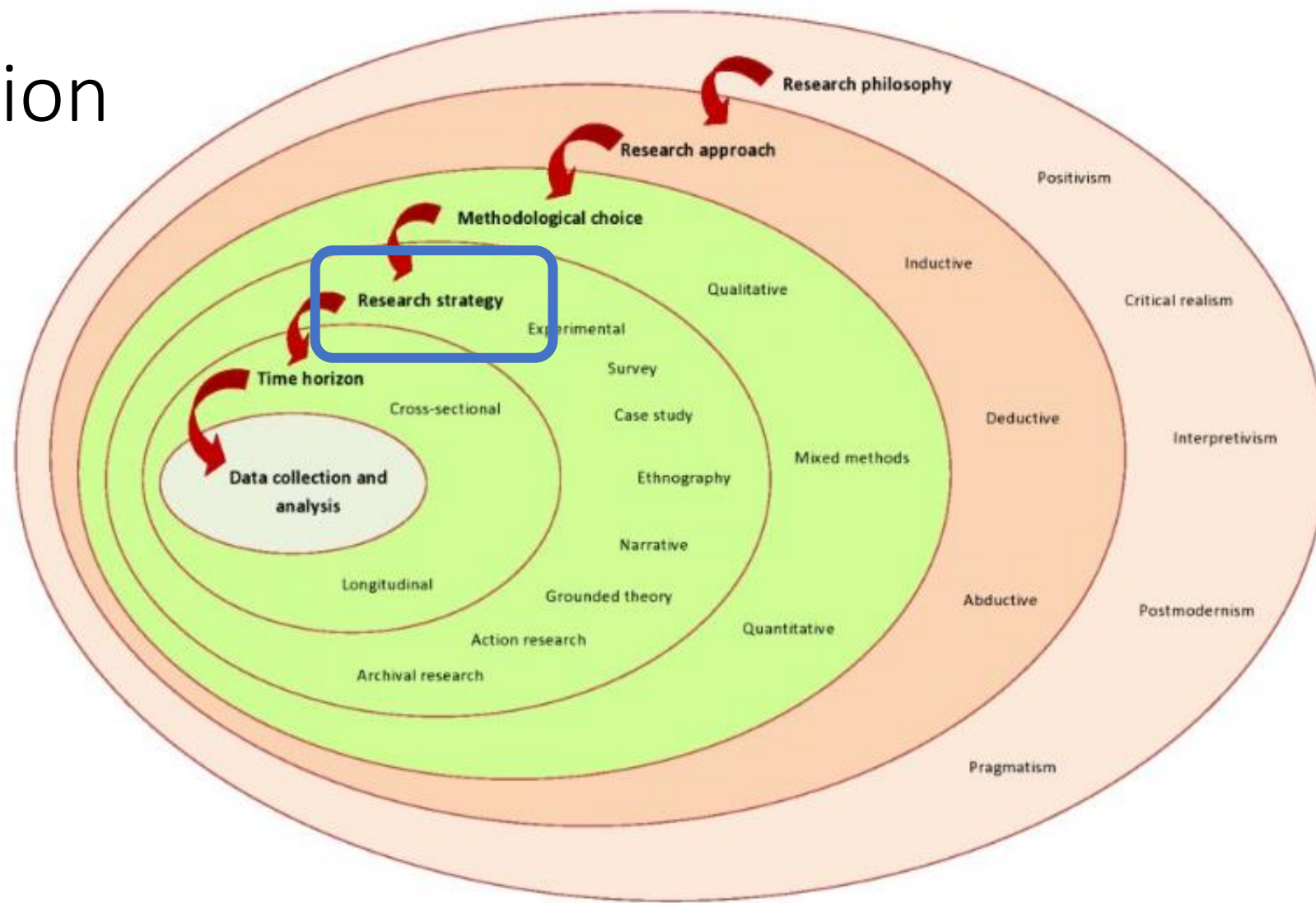


The Research Onion

Start from the outside and peel each layer away until you reach the core.

These layers are broken up into six main areas:

- research philosophy;
- research approach;
- research methodology choices;
- research strategy;
- time horizons;
- data collection techniques and analysis.



(Saunders et al., 2007)

Research Strategy

The research strategy describes how the researcher intends to carry out the work (Saunders et al., 2007).

The strategy can include a number of different approaches; e.g.

- experimental research,
- action research,
- case study research,
- surveys.



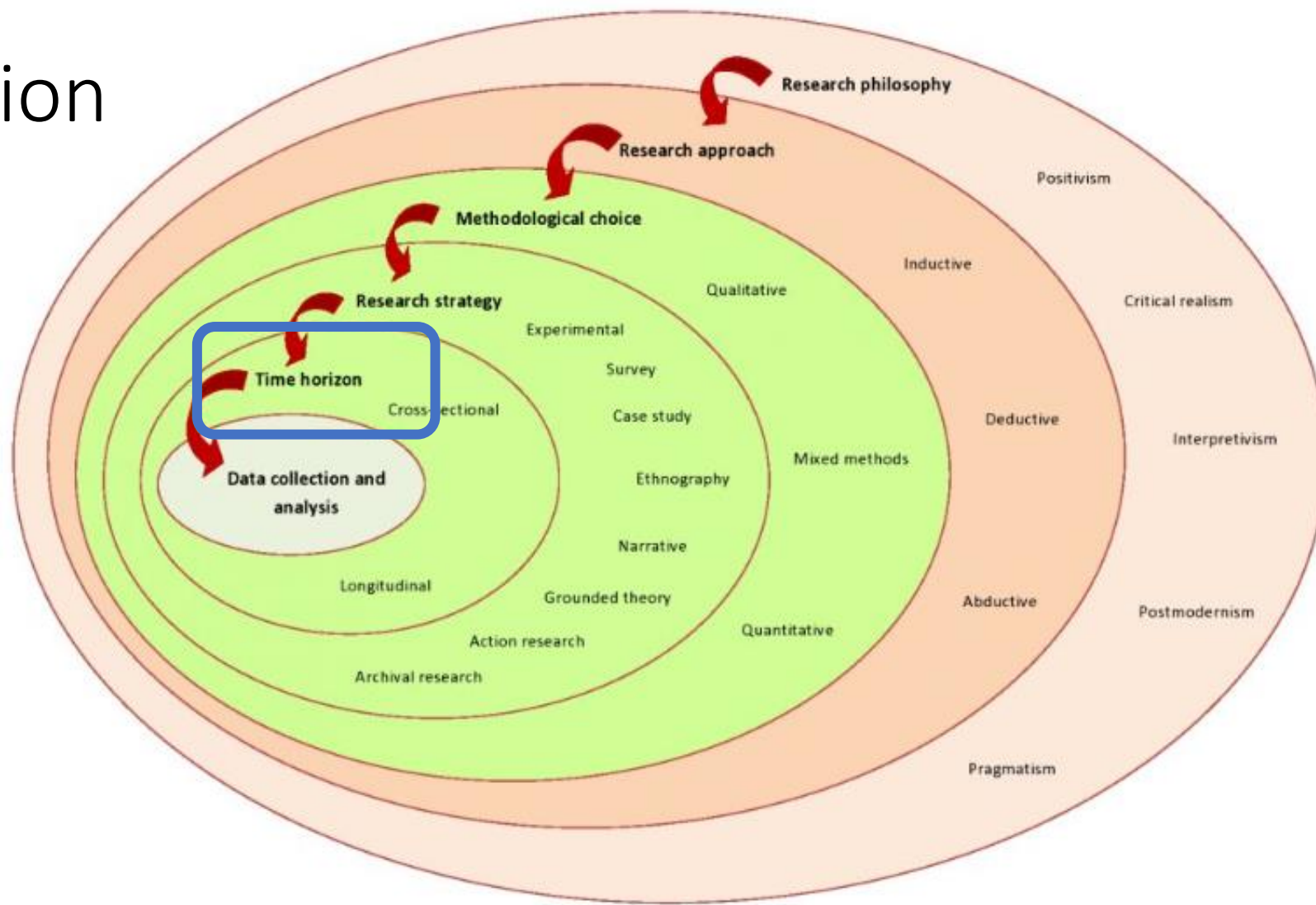


The Research Onion

Start from the outside and peel each layer away until you reach the core.

These layers are broken up into six main areas:

- research philosophy;
- research approach;
- research methodology choices;
- research strategy;
- time horizons;
- data collection techniques and analysis.



(Saunders et al., 2007)

Time Horizon

Cross-sectional

- Compares different population groups at a single point in time.

Longitudinal

- Collects data repeatedly over an extended period;
- Used where an important factor for the research is examining change over time (Goddard & Melville, 2004).

Assignment Component 1

Theoretical framework / methodology	What is your <u>positionality with regard to your topic?</u> How do the following elements have an impact on your study: • Ontology • Epistemology • Research paradigm (<u>e.g.</u> positivism, constructivism, pragmatism) Refer to literature to support your points.	700
-------------------------------------	--	-----

 Research Questions	What are your research questions? Why have you chosen them? <u>Within which paradigm do they sit?</u> What type of data would need to be collected <u>in order to</u> answer each one? You could introduce each research question separately here. Refer to literature to justify your decisions.	900
--	---	-----

Follow-up tasks

In preparation for Assessment Component 1, consider how the following elements have an impact on your study:

- Ontology
- Epistemology
- Research paradigms

Task 1:

Undertake further reading about ontology and epistemology and make notes.

Task 2:

Consider which research paradigm best suits the research that you intend carrying out.

Task 3:

Find some literature about your chosen paradigm so that you are able to refer to it to support your points.

Suggested reading / watching

Ontology, epistemology, methodology and methods:

www.youtube.com/watch?v=F2mHeudPGNI

Denscombe, M. (2010) Ground rules for social research guidelines for good practice.

Chapter 7, p.117-135.

Cohen, L., Manion, L. & Morrison, K. (2011) Research Methods in Education, 7th ed.; Routledge.

Pages 5-7: 1.3 Two conceptions of social reality