



Ontology, Epistemology Methodology Paradigms in Research

ECGE7008Q:

Session 2

Research Paradigms and Logic of Research

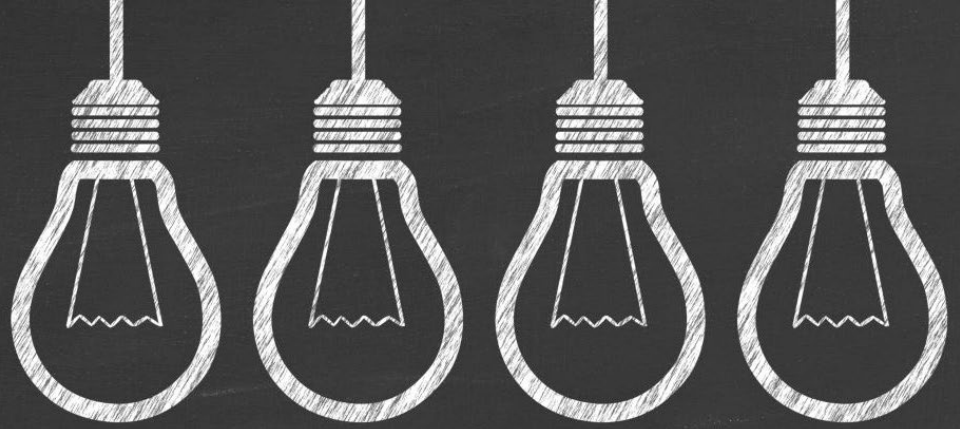


- Plato: 348–347 BC
- Logic/ Ethics
- 'Objects are inherently good, just'
- 'Things are beautiful, unified, equal'

Research paradigms and Logic of Research

- Socrates: 469/470 BC
 - Contribution to Epistemology, Ethics, Logic:
- 'I know that I know nothing'
- 'Knowledge is always proportionate
- to the realm from which it is gained'.





Research Paradigms and Logic of Research

- There are Implications for Qualitative research



What is a Paradigm?

- 'Universally recognised scientific achievements that,
- for a time, provide model problems and solutions for a community of researchers'
- What is to be observed and scrutinised
- The kind of questions that are supposed to be asked and probed for answers in relation to this subject
- How these questions are to be structured
- How the results of scientific investigations should be interpreted
- How is an experiment to be conducted, and what equipment is available to conduct the experiment



What is a Paradigm?

- The word Paradigm is used to:
 - Indicate a pattern or model or an outstandingly clear or typical example or archetype
 - Also:
 - cultural themes
 - worldviews
 - Ideologies
 - mindsets.
- It describes distinct concepts or thought patterns
- in any scientific discipline or other epistemological context.

Paradigm

- Origin:
 - late 15th century
 - via late Latin from Greek paradeigma
 - from paradeiknunai 'show side by side,'
 - from para- 'beside' + deiknunai 'to show'

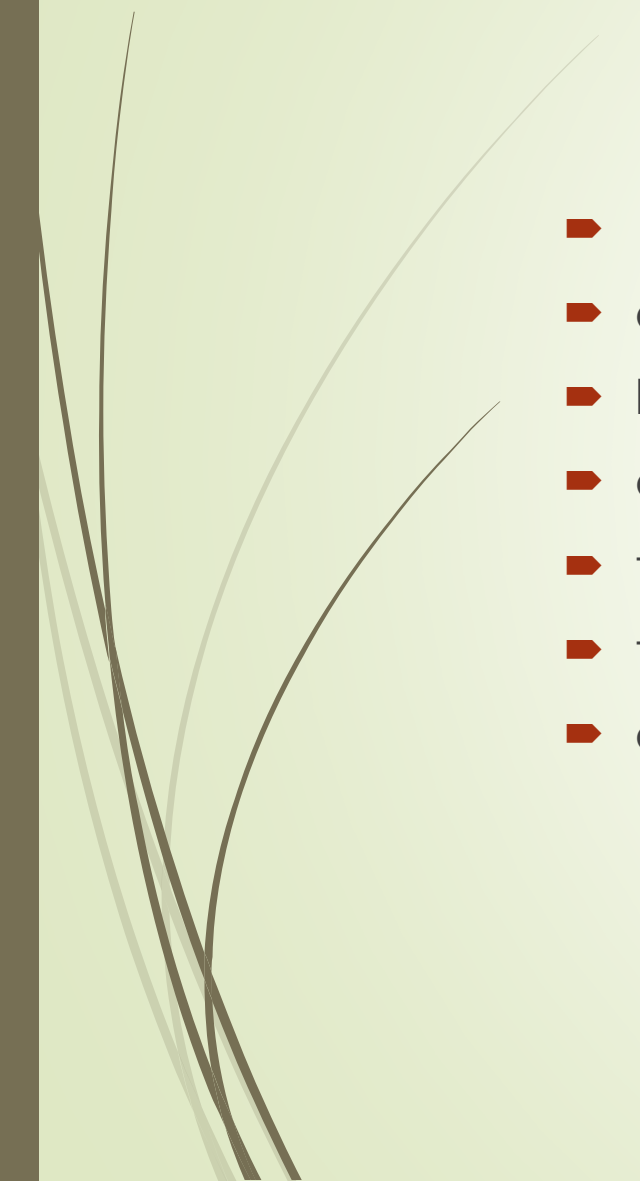


Main Components of a Paradigm

- Ontology
 - Concerned with Being
 - How do you look at reality?
- Epistemology
 - Branch of philosophy concerned with the origins, nature, methods and limits of knowledge?
- Methodology



What is Research?

- 'A studious inquiry or examination,
 - especially a critical investigation or experimentation
 - having for its aim the discovery of new facts
 - and their correct interpretation,
 - the revision of accepted conclusions,
 - theories or laws in the light of new discovered facts
 - or the practical application of such conclusions, theories or laws'
- 

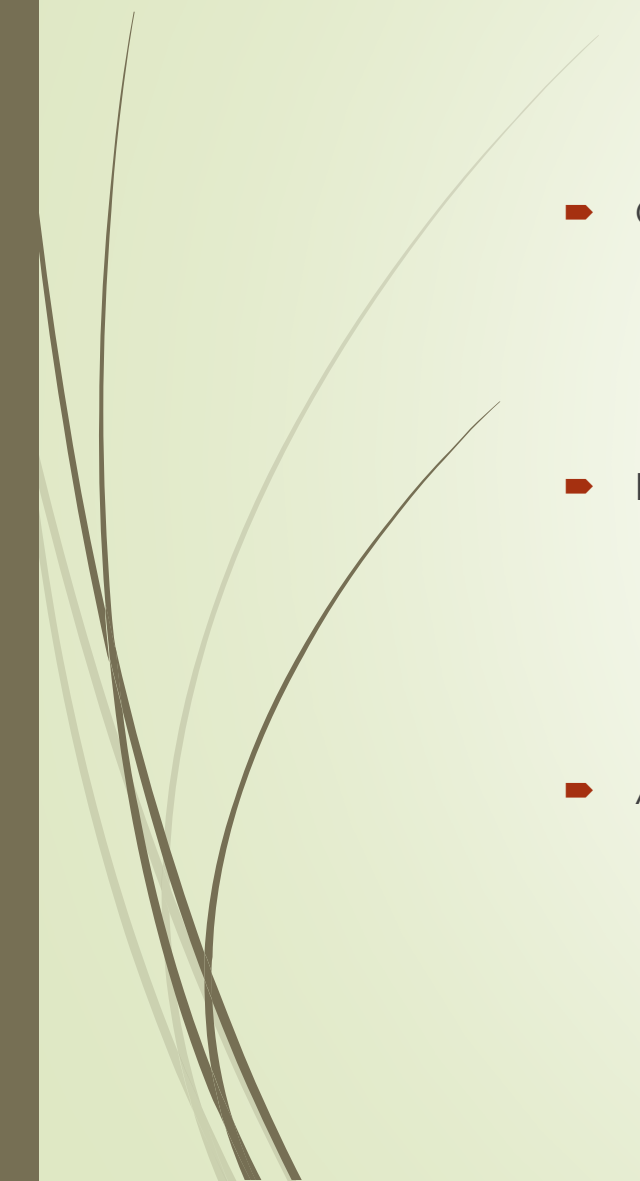


Guba and Lincoln (1994)

- Ontology:
 - Assumptions about the nature of reality
- Epistemology:
 - How the researcher comes to know that reality
- Methodology
 - How the researcher access and report what is learned about the reality



Summary



- Ontological Assumption:

- There is a reality that can be apprehended. We can determine “the way things are” and, often, discover the cause effect relations behind social reality. At the least, we can find meaningful indicators of what is “really” happening.

- Epistemological Assumption:

- The investigator and the object of investigation are independent from each other and the object can be researched without being influenced by the researcher. Any possible researcher influence can be anticipated, detected, and accounted for (controlled).

- Axiological Assumption:

- Values are excluded from the research process. They are considered confounding variables-phenomena that cloud our view of reality.

- Methodological Assumption:

- The most prevalent methods used include experiments, quasi-experiments, and other hypothesis-testing techniques. Meaningful phenomena are operationalized by determining variables that can be accurately measured.

- Rhetorical assumption:

- The research is written from the perspective of the disinterested scientist. Typically, our report is couched in mathematical terms.



Chalmers (2002)

- Ontology

- is the study of beings or their being ⇨ what is;

- Epistemology

- is the study of knowledge ⇨ how we know;

- Logic

- is the study of valid reasoning ⇨ how we reason;

- Ethics

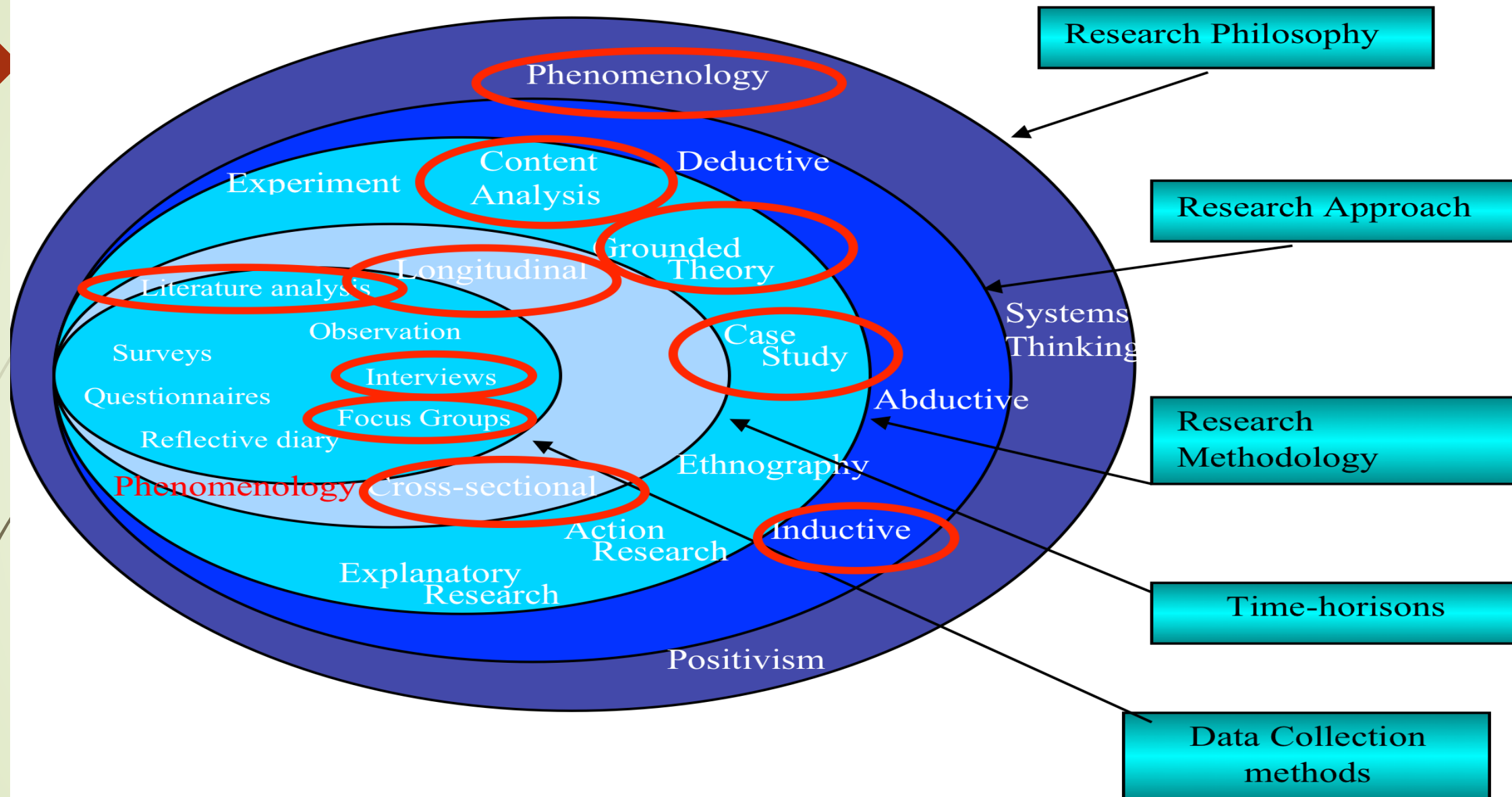
- is the study of right and wrong ⇨ how we should act; and

- Phenomenology

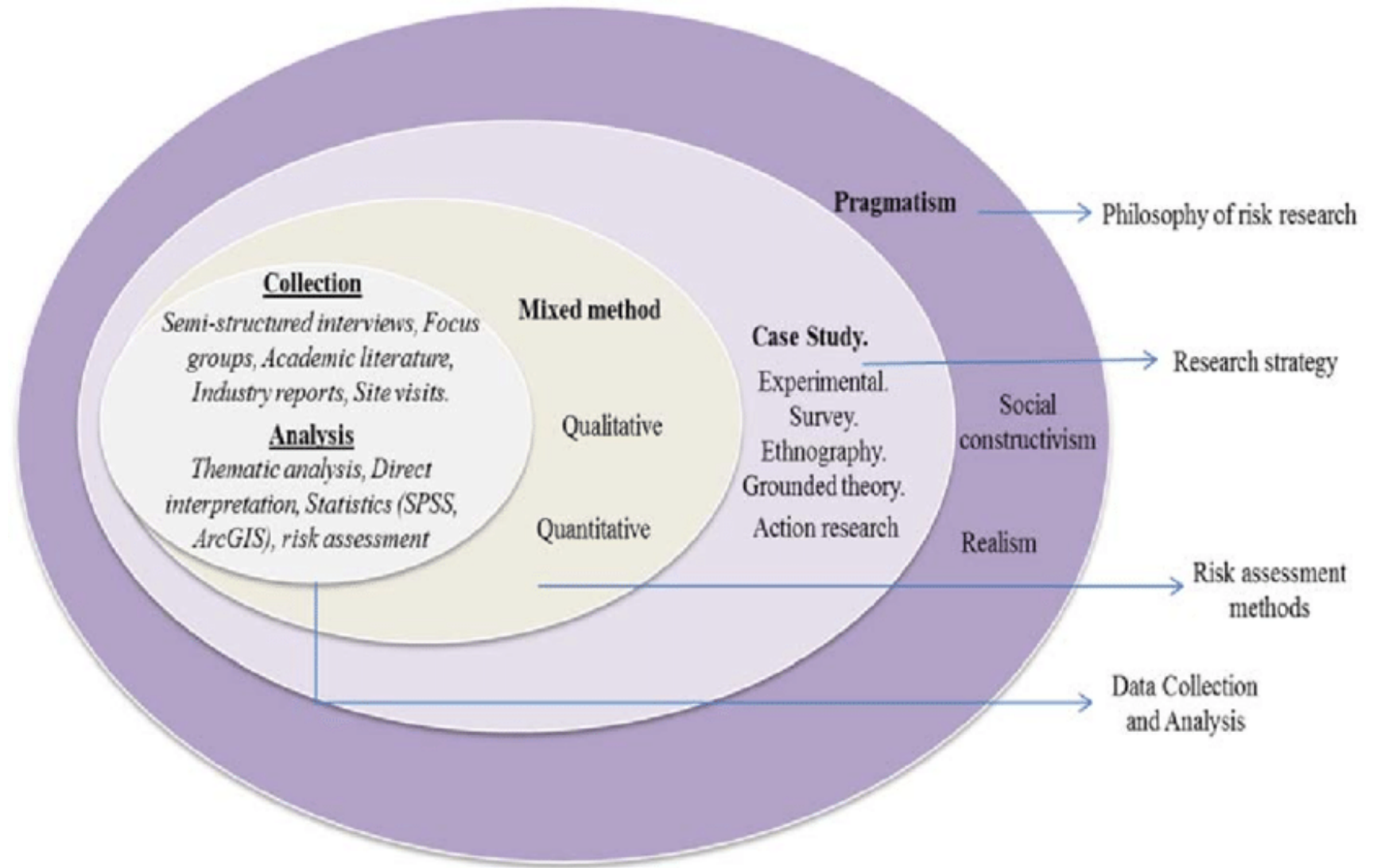
- is the study of our experience – how we experience

Example

	Positivist / Conventional	Constructivist
Ontology (nature of reality)	Reality is tangible, exists outside me, is objective, and can be broken into parts; "Truth" exists and can be apprehended and measured.	Reality is constructed, subjective, multiple, relative. Constructions are not more or less "true," only more or less informed.
Epistemology (nature of knowledge)	The knower and the known are independent of each other; the influence of the researcher on the researched can be controlled; replicable findings are "true".	Knower and the known are interactively linked; findings are "created" as research proceeds.
Axiology (role of values)	Inquiry is objective and thus value-free; values and biases can be eliminated through the use of rigorous procedures.	Inquiry is value-bound; values are inherent in the context of the study; the researcher's values affect the study.



Source: Adapted from Saunders, Lewis and Thorndale (2003: 85)





Ontology

- Origin early 18th century
 - from modern Latin ontologia,
 - from Greek ōn, ont- 'being' + -logy.
- Ontology:
 - is the starting point of all research, after which one's epistemological and methodological positions logically follow
 - A dictionary definition of the term may describe it as the image of social reality upon which a theory is based



Ontology



- Denzin and Lincoln (1994)
 - point out that it is crucial to consider the researcher's
 - personal sentiments,
 - beliefs
 - and relationship
 - to the subject matter,
 - as this may have a bearing on the method chosen
 - i.e. the researcher's Ontological persuasion

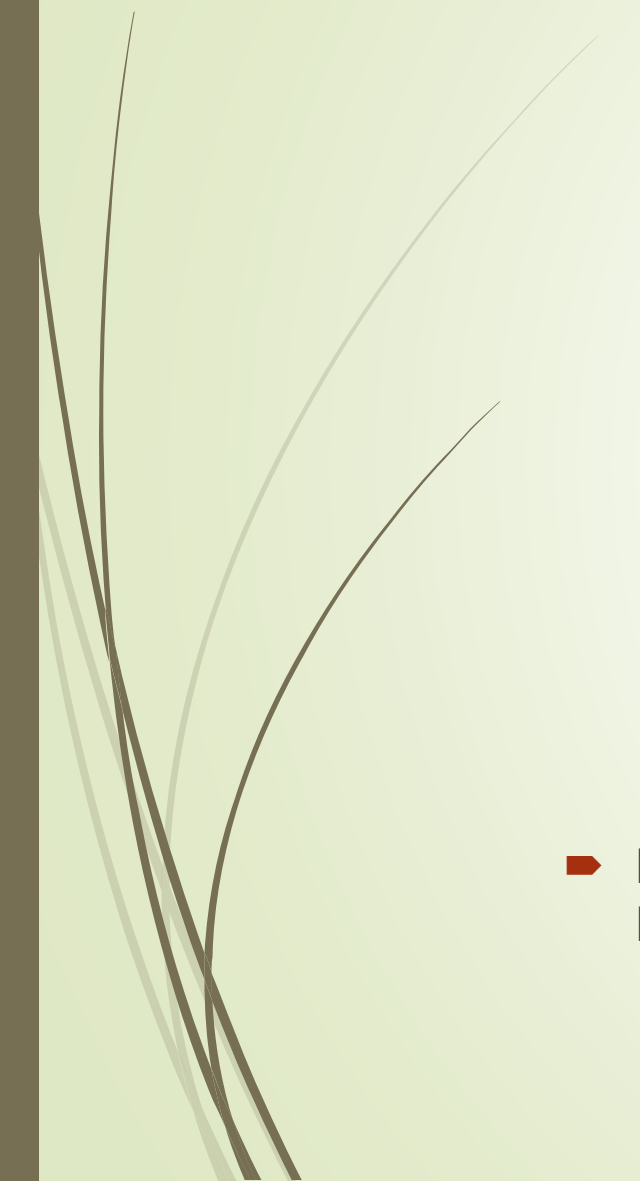


Ontology: Opposite Points of View

- Bryman (2008:18) two the ontological issues are having to do with whether
 - the social entities (Objectivism)
 - can and should be considered objective entities
 - that have a reality external to social actors,
 - or whether they can and should be considered (Constructivism)
 - social constructions
 - built up from the perception and actions of social actors



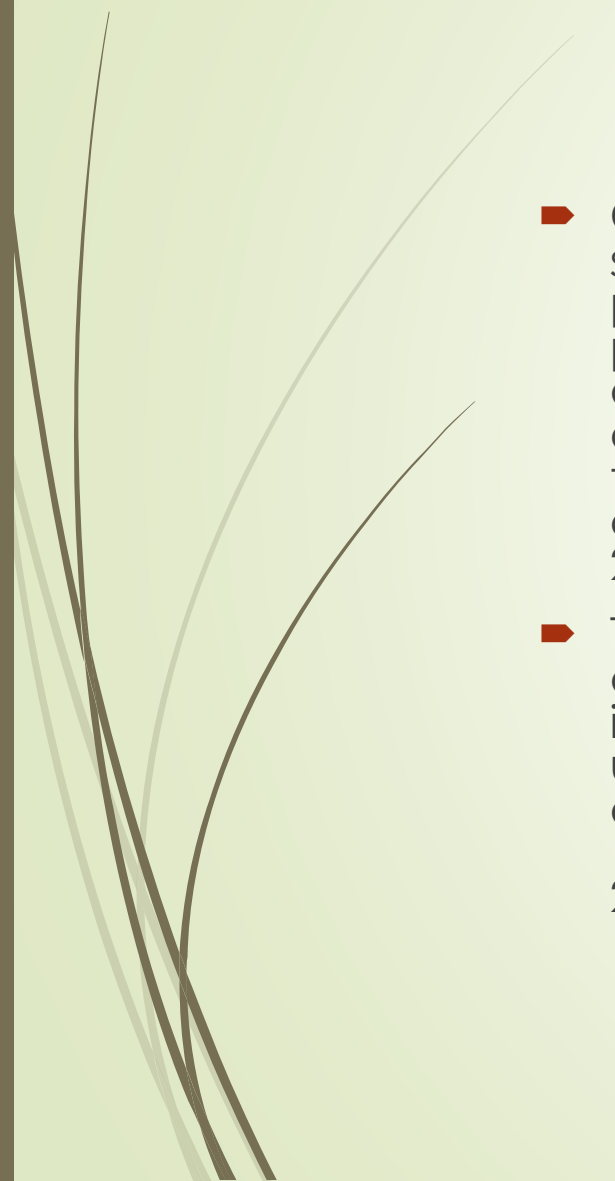
Objectivism



- This ontological position implies that
 - social phenomenon is regarded as a 'fait accompli',
 - and that those external facts are beyond our reach and therefore influence
- Objectivism presupposes that social reality has an autonomous existence outside the knower (researcher)
- Eriksson & Kovalainen (2008)
Bryman & Bell (2007)
- A typical example is that of an organisation which can be regarded as a "persona" having rule and regulation, there is a system, there is a hierarchy, and from the outside looking in, the member needs to adapt and align to the workings of the organisation if he/she wants to survive. In this instant, the organisation exhibits a constraining force that acts upon and inhibits its members



Constructivism



- Constructionism (also known as subjectivism) is an ontological position asserting that social phenomenon and their meaning are continually being accomplished by social actors, and that they are in constant construction and revision (Bryman, 2008:19).
- Taking an organisation and culture again as examples, constructivism infers the continuous change, updating and rejuvenating of the existing social structures (Becker 1982:521 as quoted by Bryman 2008:20).
- People, individuals and/or groups are definitely able to influence existing structures that at first seem external and alien. After all, the organisation and culture itself should be viewed rather as a collective extension of the individuals wants, needs and meaning, cohorted into an assemblage that eventually is known as an enterprise or a particular culture.

Bryman (2008:22)

Table 3.1 Fundamental Differences in Research Strategy

	QUANTITATIVE	QUALITATIVE
Principle orientation the roll of theory in relation to research	Deductive Testing of Theory	Inductive Generation of Theories
Epistemological Orientation	Natural Science Model, in particular Positivism	Interpretivism
Ontological orientation	Objectivism	Constructionism (Subjectivism)

Source: Adapted from Bryman (2008:22)



Epistemology

- Origin mid 19th century
 - from Greek epistēmē 'knowledge,'
 - from epistasthai 'know, know how to do.'
- Epistemology is the branch of Philosophy that studies knowledge,
 - by attempting to distinguish between 'True' (and adequate) knowledge
 - and 'False' (inadequate) knowledge
 - (Erikson and Kovalainen, (2008:14).



Realism



- Emergence since the 1960s of a second philosophical position within the epistemological discourse,
 - that of realism, and in particular,
 - Critical Realism.
- Critical Realism
 - takes the view that change can only take place if the structures responsible for the events and discourses are known and influenced. As Bhaskar (1989: 2 cited in Seo, 2014) points out:
 - These structures are not spontaneously apparent in the observable patterns of events. They can only be identified through the practical and theoretical work of the social sciences.



Interpretivism



- Interpretivism, (also known as Post-positivism),
 - is a term given to a contrasting epistemology to that of Positivism (Bryman 2008:16).
 - It concerns the theory and method of the interpretation of Human Action
 - While positivist's point of departure is to explain human behaviour,
 - the social sciences are more concerned about understanding human behaviour.
- As Max Weber (1864-1920 cited in Martin, 2000) pointed out,
 - time has come for us to “Understand” social dynamics,
 - Translated from the German word of ‘Verstehen’, meaning ‘understand’ and not simply to ‘measure’ it



Interpretivism



- Interpretivism as a philosophical position within an epistemological stance that treats reality as being
 - fluid,
 - knowledge is subjective,
 - everyone has a 'common sense thinking'
 - and the truth lies within the interpretation of the persons reality,
 - upon which he/she accordingly acts,
 - reacts and interacts with that 'reality'.
- This phenomenon is subject to the person's beliefs, values, culture, standing, language, shared meaning and consciousness
- (Bryman, 2008:17; Grbich, 2010)



Interpretivism



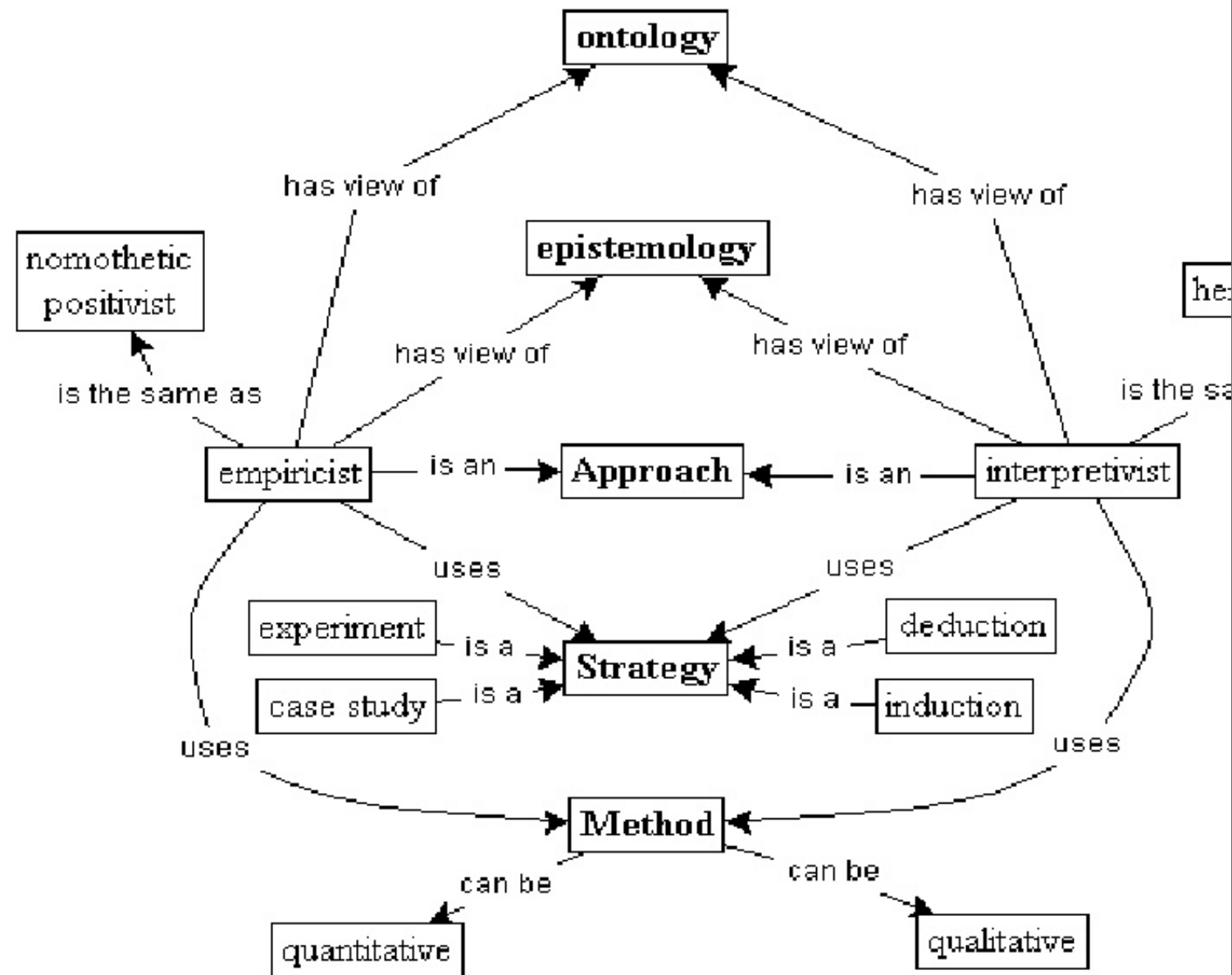
- Interpretivism or interpretive theory as per Charmaz, (2006:126 cited in Given, 2008),
 - calls for the imaginative understanding of the studied phenomenon
- This type of theory assumes
 - emergent,
 - multiple realities;
 - indeterminacy;
 - facts and values as linked;
 - truth as provisional
 - and social life as processual

Table 1.1 Positivism and Social Constructionism and Research

	Positivism	Social Constructionism
The researcher	independent, objective	part of what he or she is studying
Human interest, intuition, reflection	detached, irrelevant	crucial to research process and investigation
Research goal	demonstrate causality	increase general understanding of situation
Research process	progress made through hypotheses and deductions	probing rich data to increase understanding
Concepts and variables	must be operationalized for measurement and quantitative analysis	should incorporate stakeholder perspectives
Unit of analysis	identifiable and reduced to simplest terms	may include complexity of whole theoretical abstraction
Generalization patterns	statistical probability	may be non-probability sampling method with a small number of cases for specific reasons ⁶
Sampling requirements	probability sampling with adequate sampling size	

Relationship between Different Terms in Research Sciences

Figure 2.1 Relationship between different terms relating to research sciences





Sparkes & Smith (2014)

- All researchers who plan to explore objectives
 - should explain their worldview,
 - 'since it uses a methodology of the heart to some extent and at least begs for consideration'



Existentialism



- The following assumptions emerge:
 - Existence is always particular and individual
 - It is the problem of the mode of being and therefore also an investigation of the meaning of being
 - The investigation is continually faced with diverse possibilities, among which the individual must make a selection and commit himself to
 - Because these possibilities are determined by the individual's relationships with other human beings and things, existence is always a situation that limits or conditions choice
- (Versfeld cited in D'Oro & Overgaard, 2017)

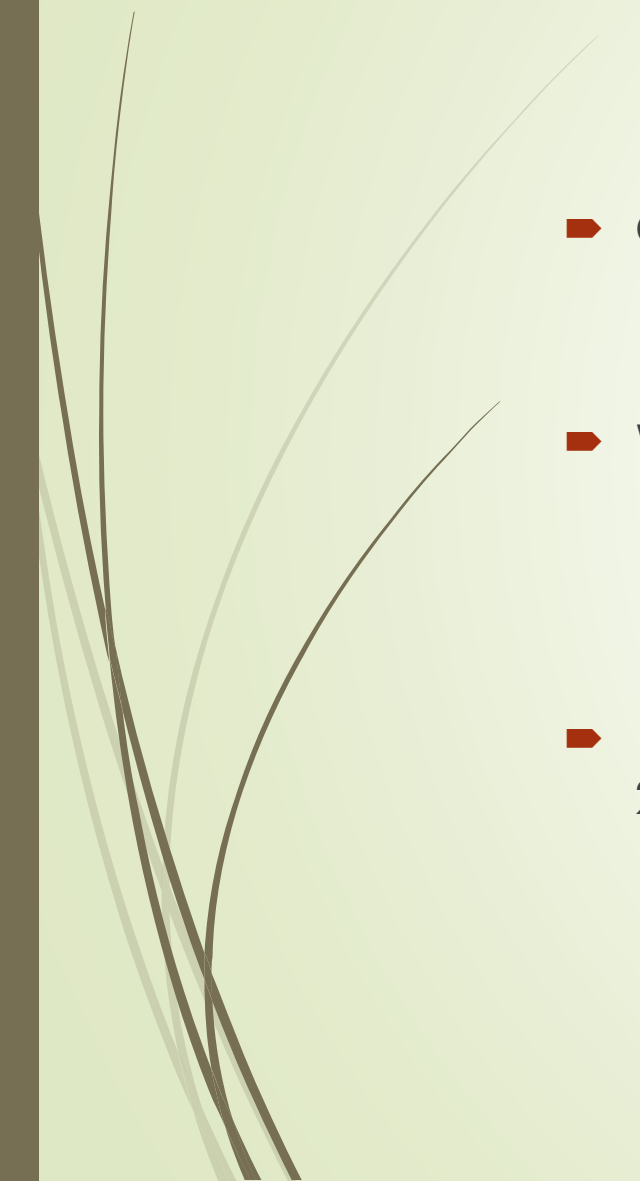


Constructivism

- Constructionism or a constructivist grounded theory approach
 - places priority on the phenomenon of study
 - and sees both data and analysis as created from
 - shared experiences and relationships with participants
 - (Charmaz, 2006:130 2006:126 cited in Given, 2008).



Positivism



- One of the central questions in Epistemology is the question of
 - whether the social world can, and in fact should be, studied according to the same principles, procedures and ethos as the natural sciences
- When assuming an epistemological position based on the natural sciences,
 - i.e. the composition of reality from observable material objects, it is known as Positivism.
- (Bryman 2008; Meyers, 2020; Eriksson & Kovalainen, 2008; Bryman & Bell, 2007)



Positivism

- Positivism adopts a quantitative approach to investigating phenomena,
 - assuming an Epistemological position that advocates the application of the methods of the natural sciences to the study of social reality,
- as opposed to post-positivist approaches,
 - which aim to describe and explore in-depth phenomena from a qualitative perspective, according
 - (Proctor, 1998 cited in Bassett, 2004; Bryman, 2008)



Phenomenology



- Phenomenology

- is the study of the contents of consciousness (phenomenon)
- and phenomenological methods are ways in which these contents may be described and analysed
- (Sokolowski, 2017; 2000).

- Despite the fact that phenomenology has a theoretical orientation,

- it does not generate deductions from propositions that may be empirically tested
- (Darroch & Silvers 1982 cited in Green, Camilli & Elmore, 2006).

- Phenomenology

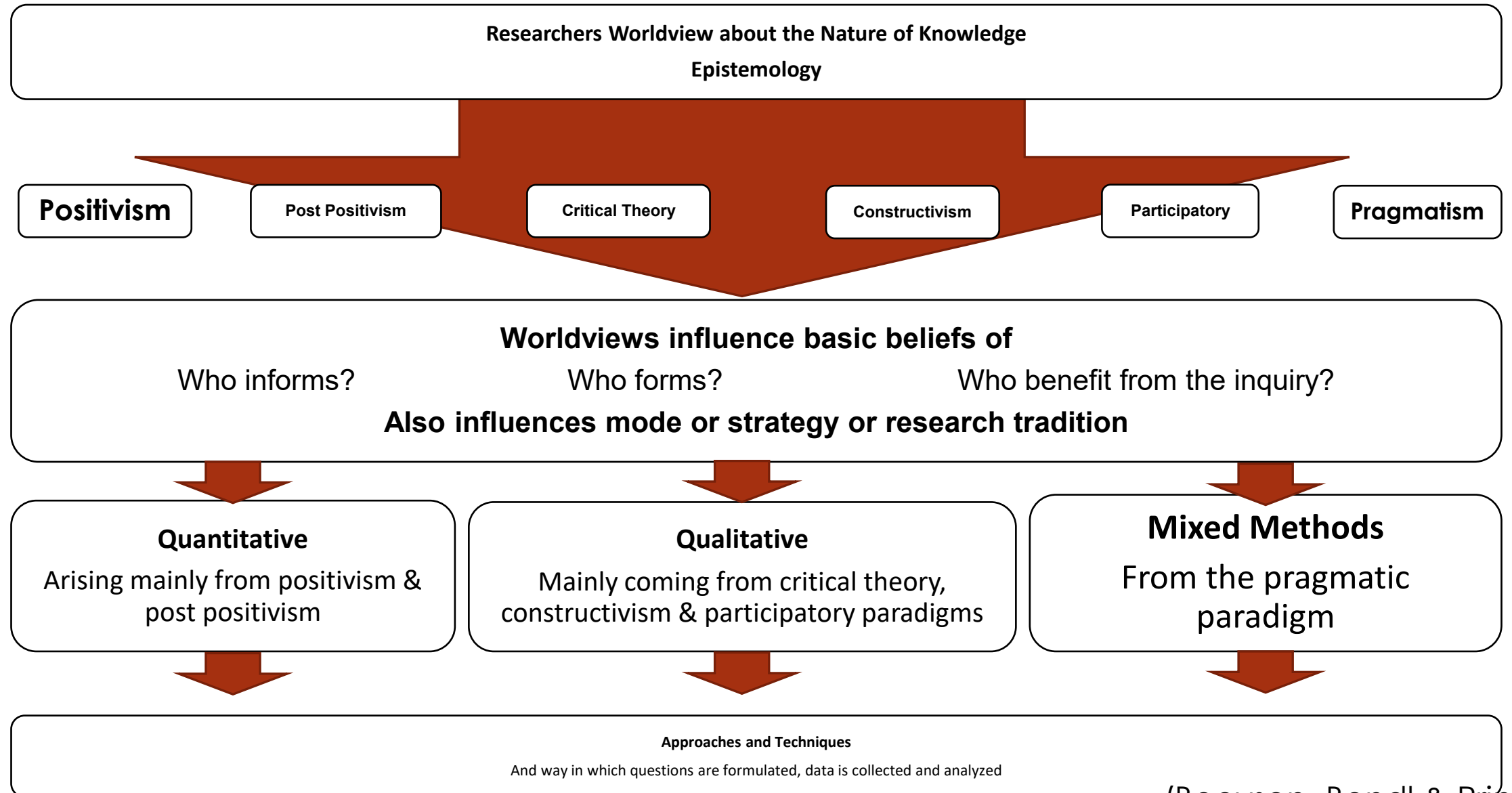
- operates more on a meta-level,
- and demonstrates its premises through descriptive analyses of the procedures of the self,
- and the situational and the social setting



Philosophical Underpinning

- At the heart of all research, is an endeavour to find out, to investigate, confirm, probe, test, see or view, measure, correlate, compare, evaluate, find meaning, gain understanding, or to discover new emerging properties.

(Bless, Higson-Smith & Kagee, 2006)



(Booyesen, Bendl & Pringle, 2010)

The Previous Slide then Leads to:

Research Methods

Assumptions of Approach	Qualitative Research Paradigm	Quantitative Research Paradigm
Ontological Perceptions of reality	Multiple subjectively derived realities co-exist	Single objective world
Epistemological Theory of knowledge	Researchers interact with phenomenon (personal investment)	Researchers are independent from the variables under study (detached)
Axiological Study of underlying values	Researchers act in a value-laden and biased fashion	Researchers act in a value-free and unbiased manner
Rhetorical Use of language	Use personalized, informal and context-based language	Use impersonal, formal and rule-based text
Methodological	Researchers use induction, multi-process interventions, context-specific methods	Researchers use deduction, cause-and-effect relationship and context-free methods

Mixed Methods

(Booyesen, Bendl & Pringle, 2011)



Research

- Mouton (1996: 28) simply states that:
 - the predominant purpose of all research is to arrive at results that are as close to the truth as possible.



Research Design



- A research design is
 - 'an activity- and time-based plan; a blueprint for fulfilling research objectives and answering question'

Cooper, Schindler & Sharma, 2012)

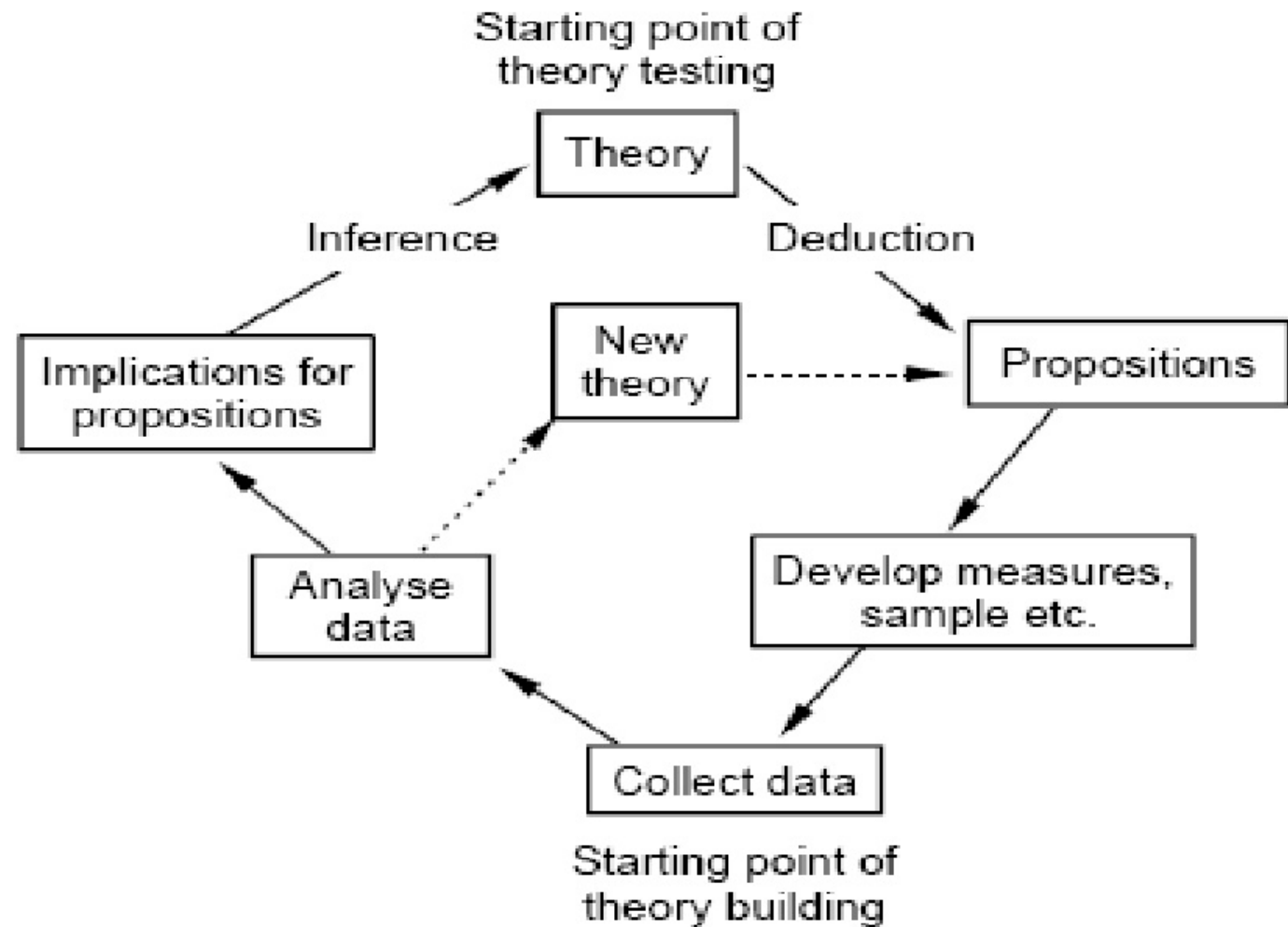
- A research design can be likened to
 - a house plan
 - which shows on paper what the final house is going to look like
 - and guides a builder on how the house should be built

(Mouton: 1996).



Lynham (2002)

- Two common theory building strategies
 - Research-to theory strategy
 - Theory-to-research strategy
 - Inductive-deductive nature
 - This has been well applied to behavioural and human sciences
 - Post modernistic
 - 'data does not create theory or models, humans do'
 - (Mintzberg in Saha & Corley, 2006 cited in Denzin & Lincoln, 2017)



The logic of the research process



The Conceptual Design

- 5 phases:
 - Conceptual development
 - Operationalisation
 - Application
 - Confirmation or disconfirmation
 - Continues refinement and development

(Lynham, 2002 cited in Denzin & Lincoln, 2017)



The Conceptual Design: Phase 1

- Conceptual Development
 - Use literature to identify themes and patterns in definitions and use of the concept to obtain clarification in previous studies
 - Develop an informed conceptual framework that provides an initial understanding and explanation of the nature and dynamics of the phenomenon

(Cresswell, 2014)



The Conceptual Design: Phase 2

➤ Operationalisation

- Explicit connection between the conceptualization phase and practice
- Link theoretical ideas, concepts, models to practice
- Form theoretical framework of the model to be built
- Include design and explanation of the model that could be applied in practice
- You continue until no substantively different information could be found and saturation thus experienced

(Shah and Corley, 2006 cited in Denzin and Lincoln, 2017)



The Conceptual Design: Phase 3

- Confirmation or disconfirmation
 - This involves the planning, design, implementation and evaluation of a research agenda
 - Literature search and review focused on the envisioned model to be developed, to clarify and explain the model and to ensure that no reference suggest probable falsification of theory behind model
 - (Popper in Lynham, 2002)



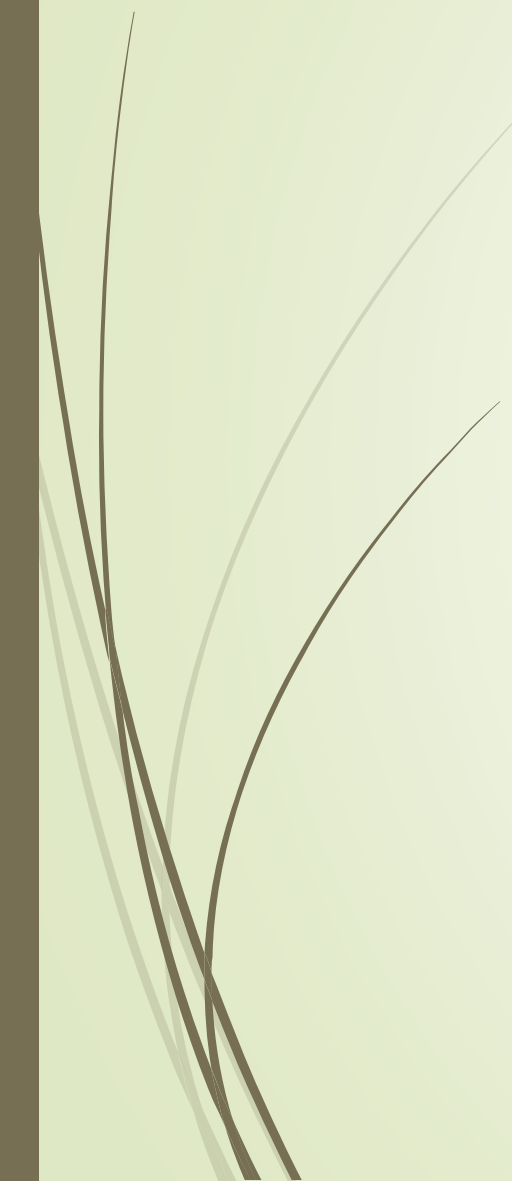
The Conceptual Design: Phase 3

- Positivism
 - If you believe that theories of phenomenon under studied do exist out there between the lines of scientist that use the concept but need to be found, also on more post modernistic lines, to be explained
- Greggor and Jones (20007)
 - Any researcher will find more or less the same result, independent of their worldview
 - By constructing theory this way,
 - the aim is to make sense of what is observed in the use of the concept,
 - by ordering the relationships among elements in the focus of the study

(Dubin, 1978; Lynham, 2002)



The Conceptual Design: Phase 4

- Application and Empirical Testing
- 



The Conceptual Design: Phase 5

- Continuous Refinement
 - Continues literature review progress



4 Types of Triangulation

- Data Triangulation:

- Data is collected at different times and source and combined, or compared to increase confidence;

- Investigator Triangulation:

- data is gathered by different investigators, independently and compared/combined to increase confidence;

- Methodological Triangulation:

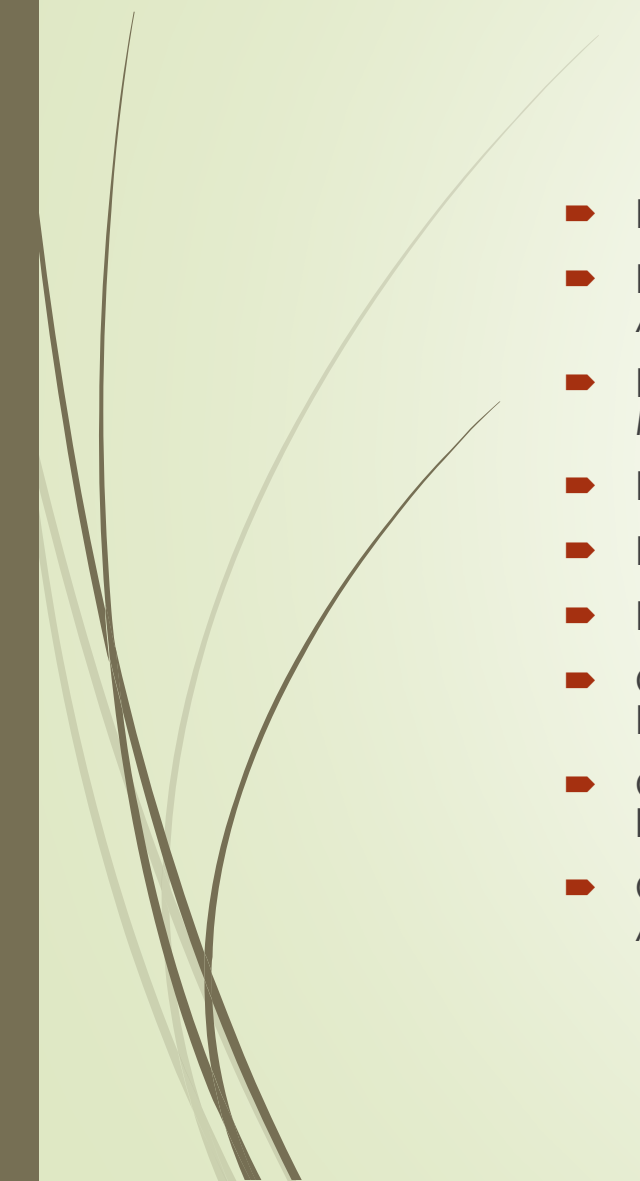
- Using both qualitative and quantitative methods to increase confidence, and

- Theories Triangulation:

- using two different theories to explain the same problem.



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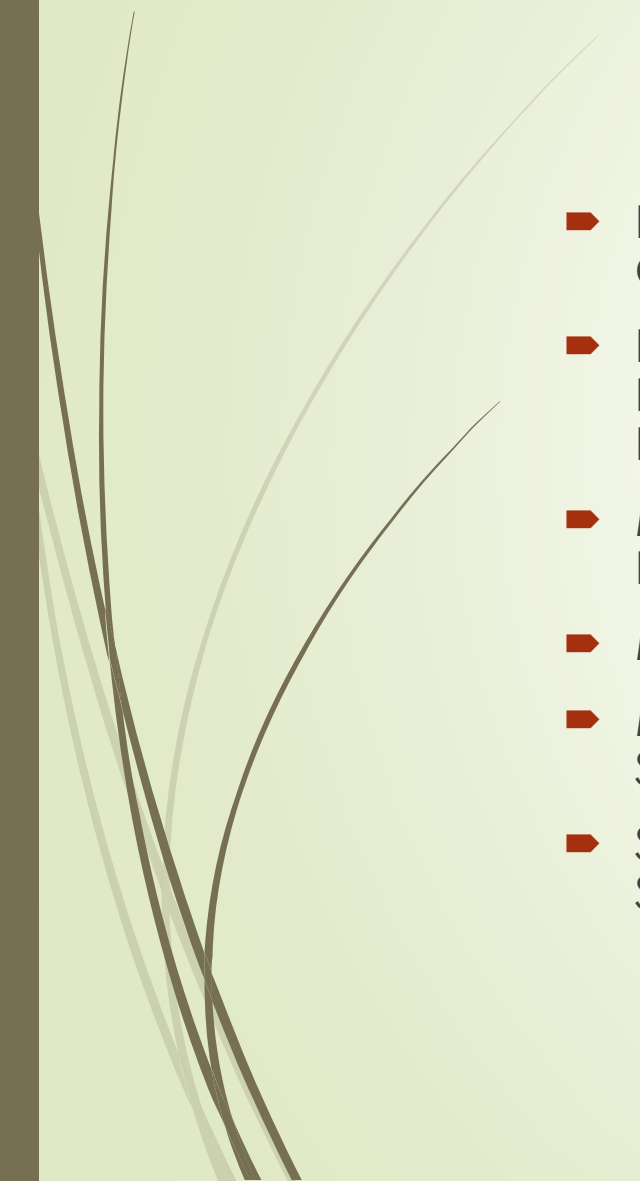


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