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Ontology, Epistemology, and Methodology

DSAW6075/DSAW7075
Research Methods for Work-
based Learning

Trawsnewid Addysg; Trawsnewid Bywydau
Transforming Education; Transforming Lives



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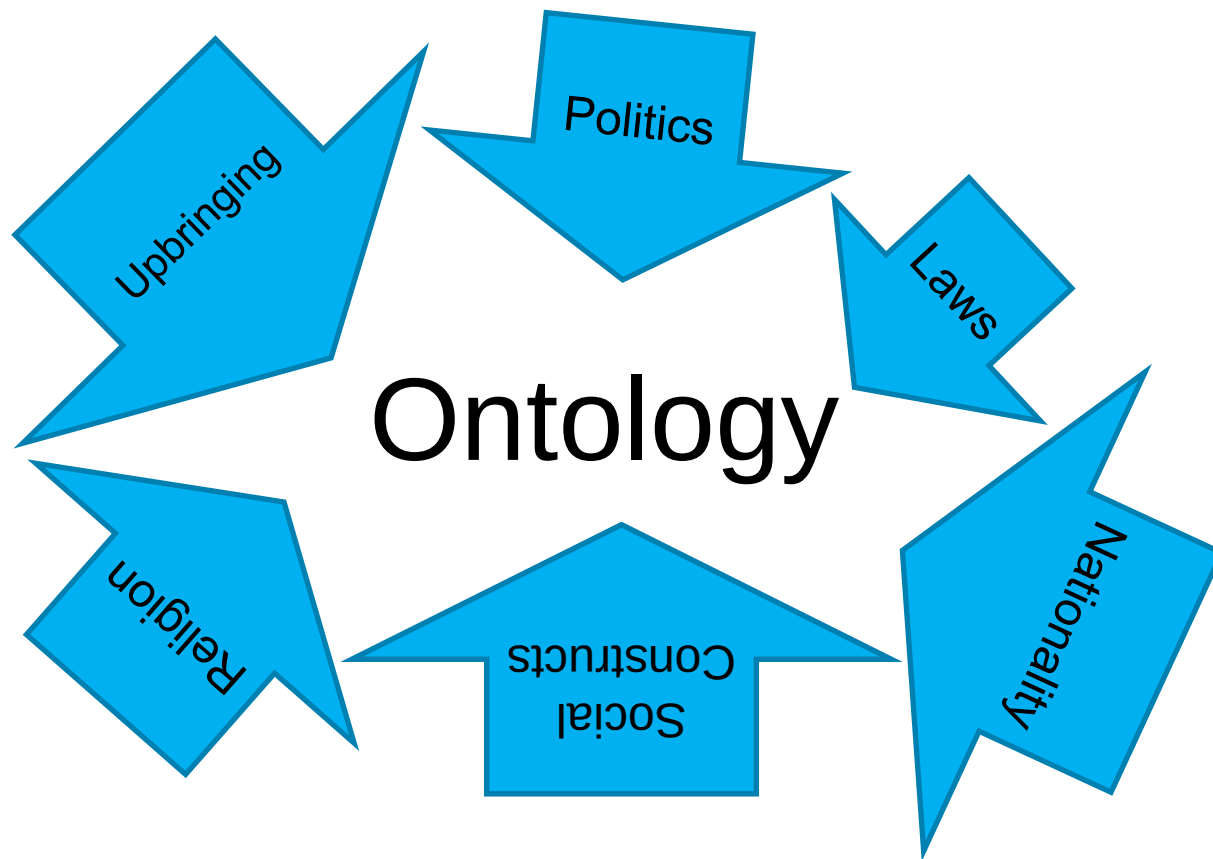
Where does our research come from?

Except at NASA...

- Research never exists in a vacuum.
- Every element of research – from the way we identify questions to ask to the way we decide to answer those questions – is influenced by our worldview, our beliefs, our environment, our upbringing, and many other factors

Ontology

- A branch of philosophy/metaphysics, ontology literally translates to the study (-‘ology’) of being (‘onto’-)
- Our ontological positions and beliefs have a strong influence on the way we see the world, the research questions we see, and the way in which we choose to answer them



Ontology

Objectivism

- Reality is fundamentally objective, and independent of other factors
- Truth, reality, fact, etc. are things that exist and can be found

Subjectivism

- Reality cannot be understood without accounting for subjective experience
- Truth, reality, fact, etc. do not really exist – everything we know and think comes through our 'lens'

Ontology

Either it happened or
it didn't

Some things are
fundamentally 'true'
and some are
fundamentally 'false'

Whether or not it
happened depends
on who you are and
where you're coming
from

What is 'true' and
what is 'false'
depends on your
perspective

Getting to grips with ontology...

“The Dress” and Objective Reality

If you received information relating to the 2015 “the dress” controversy your job is to convince me of the merits of Objectivism as an ontological position, using this case as an example

“Shazam” and Subjective Reality

If you received information relating to the “missing” 1990s children’s film “Shazam” your job is to convince me of the merits of Subjectivism as an ontological position, using this case as an example

Crime in apartment buildings

Objectivists wonder:

- Where does crime occur?
- What types of crimes occur?
- Who commits crimes?



Subjectivists wonder:

- What is “crime”?
- Do we all view “crime” in the same way?
- What is the impact of behaviour we call “criminal”?

Where do you stand?

- What do you think is your preferred ontological position?
- What do you think is the preferred ontological position of your workplace?
- Do they link up? How does this agreement/opposition affect research potential?

Epistemology

- Epistemology literally translates to the study ('-ology') of knowledge ('epistem-')
- Our epistemological positions can help us understand what we think of as 'knowledge', how knowledge is created, and what knowledge is valid

How deep
must we dig to
uncover the
'real truth'?

What is truth?

Epistemology

What is
knowledge?

What kinds of
information are
legitimate?

Epistemology

Positivism

- The scientist!
- We find knowledge/information by measuring, gauging, observing, etc. using the senses
- Research should adhere strictly to the 'scientific method' and remain at arm's length from participants/subjects
- What is important is understanding occurrences

Interpretivism

- The detective!
- We find knowledge/information through interpreting and understanding
- Research should be flexible and interactive, allowing participants/subjects to drive questions
- What is important is understanding experiences

Epistemology

I only trust
the numbers

I only trust
what people
think

It's only true if
you can back it
up with evidence

It's true if
enough people
believe it's true

Fact matters more
than opinion in
understanding

Fact and opinion
are equally
important in
understanding

Getting to grips with epistemology...

“Eyewitness Testimony” and Positivist Enquiry

If you received information relating to “eyewitness testimony” your job is to convince me of the merits of Positivism as an epistemological position, using this case as an example

“Indigenous Earthquake stories” and Interpretivist Enquiry

If you received information relating to “Indigenous earthquake stories” your job is to convince me of the merits of Interpretivism as an epistemological position, using this case as an example

Crime in apartment buildings

Objectivists wonder:

- Where does crime occur?
- What types of crimes occur?
- Who commits crimes?

Positivists ask:

- Do crimes occur in these buildings?
- What crimes occur in these buildings?
- Is there increased risk in these buildings?



Subjectivists wonder:

- What is “crime”?
- Do we all view “crime” in the same way?
- What is the impact of behaviour we call “criminal”?

Interpretivists ask:

- Do residents experience crimes in these buildings?
- What do people in these buildings consider to be ‘crimes’?
- Do people feel safe in and around these buildings?

Where do you stand?

- What do you think is your preferred epistemological position?
- What do you think is the preferred epistemological position of your workplace?
- Do they link up? How does this agreement/opposition affect research potential?

Methodology

- Methodology literally translates to the study ('-ology') of ways of searching ('method-')
- The methodology we choose is grounded in our ontological and epistemological positions, and reflects what we think is the **BEST** way to:
 - answer the questions we've identified (through our ontological lens), in order to:
 - get to the answers we see as valid (because of our epistemological position).

Methodology

Qualitative

- Data have 'qualities' that are generally not numeric and must be understood rather than measured
- Tends to look for meaning or experience
- Inductive = developing theory

Quantitative

- Data are numerical in nature, and can be measured and 'quantified'
- Tends to look for cause and effect or pure fact
- Deductive = testing theory

Method(ology) Man asks...

What is the most effective way for me to answer the question I have in a way that provides me with knowledge or information I feel is valid?



Methodology

Common Qualitative Methods

- Interviews (semi- or un-structured)
- Questionnaires (open-ended or opinion questions)
- Observation
- Focus group discussions
- Diaries
- Case study
- Role-playing
- Action research

Common Quantitative Methods

- Interviews (semi- or structured)
- Questionnaires (closed-ended questions)
- Observation
- Focus group discussions
- Logs
- Case study
- Measuring
- Experiments
- Content analysis
- Ex post facto experiments
- Testing

Crime in apartment buildings

Objectivists wonder:

- Where does crime occur?
- What types of crimes occur?
- Who commits crimes?

Positivists ask:

- Do crimes occur in these buildings?
- What crimes occur in these buildings?
- Is there increased risk in these buildings?

Quantitative questions:

- Are crime statistics available?
- Have we categorised the crimes that occur?
- Can we compare these buildings to others?

Quantitative seeks:

- Statistics on crime
- Rates of crime
- Measurements of crime
- Comparison to other buildings



Subjectivists wonder:

- What is “crime”?
- Do we all view “crime” in the same way?
- What is the impact of behaviour we call “criminal”?

Interpretivists ask:

- Do residents experience crimes in these buildings?
- What do people in these buildings consider to be ‘crimes’?
- Do people feel safe in and around these buildings?

Qualitative questions:

- Have we spoken to residents to get their views?
- Do residents think certain crimes are more or less important?
- Can we observe the interaction of residents or behaviours of passers-by?

Qualitative seeks:

- Experience of crime
- Knowledge of crime
- Interpretations of crime

Where do you stand?

- What methodology do you think you prefer?
- What methodology do you think your workplace prefers?
- Do they link up? How does this agreement/opposition affect research potential?

Review Ontology, Epistemology, and Methodology

- Cohen, L., Manion, L. and Morrison, K. (2011) *Research Methods in Education*. Abingdon: Routledge.
 - Part 1 (p. 1-72)
- Gill, J and Phil Johnson, (2012) *Research Methods for Managers*. (4th ed) London: Sage.
 - Chapter 3 (p. 38-68)
- Easterby-Smith, M., Thorpe, R., and Jackson, P., (2012) *Management Research*. (4th ed) London: Sage.
 - Chapter 4 (p. 55-80)
- Gray, D. E. (2004). *Doing Research in the Real World*. London: Sage.
 - Chapter 2 (p. 15-34)
- Reason, P. and Bradbury, H. (2001) *Handbook of Action Research: Participative Inquiry and Practice*. London: Sage.
 - Part 1 (p. 15-156)
- Saunders, M., Lewis, P. and Thornhill, A. (2009) *Research Methods for Business Students*. (5th ed) London: Pearson Education Ltd.
 - Chapter 4 (p. 106-135)