

**University of Malta
Faculty of Education**

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Workshop for doctoral candidates and supervisors

MAKING THINKING VISIBLE AND THINKING LIKE RESEARCHERS

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Thinking is pretty much
invisible . . .
Mostly, thinking happens
under the hood, within
the marvelous engine of
our mind-brain

(Ritchart, Church and Morrison, 2011)

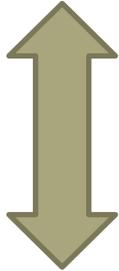


Thinking does not happen in a lockstep, sequential manner, systematically progressing from one level to the next.

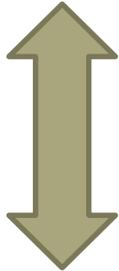
It is much messier, complex, dynamic and interconnected than that.

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THINKING



DOING



WRITING

A worthy doctorate is to be recognised and applauded for its **conceptualisation** and **high level thinking**.

In the process of **doing** a doctorate, every phase entails different **levels of thinking**.

Considering that thinking is pretty much invisible, this **thinking must be visible in the text** of the thesis, so that readers can acknowledge the scholarship of the thesis.

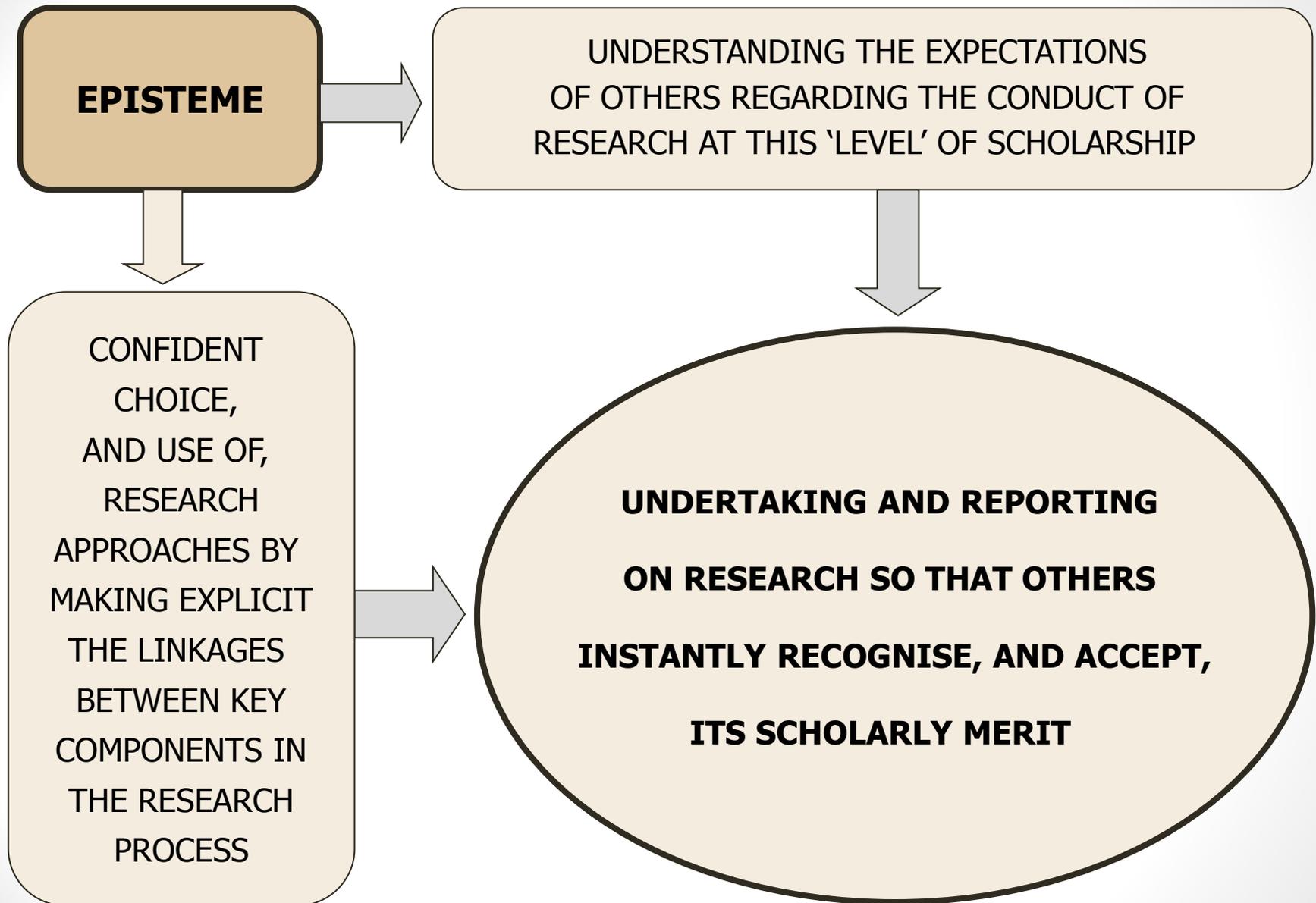
THINKING LIKE, OR EXHIBITING, A

EPISTEME ~ thinking like a researcher within systems of ideas or ways of understanding that experienced researchers can instantly recognise.

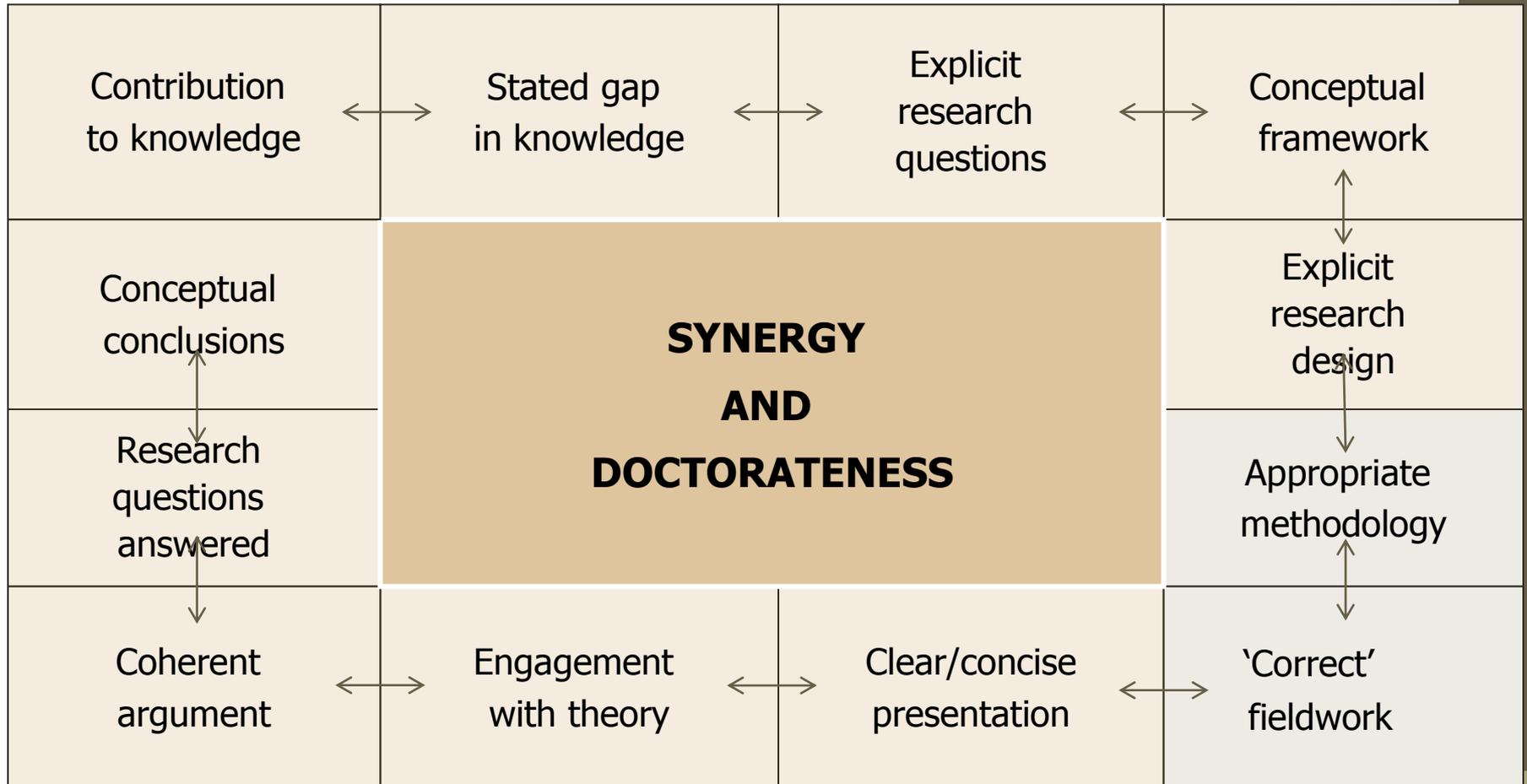
This pluralist concept is evident when candidates display doctorateness in their approach to research, presentation of their thesis and during its defence that includes explanation and conceptual grasp.

Exhibiting episteme is dependent upon possessing understanding of something and having the capability to apply that understanding in appropriate ways.

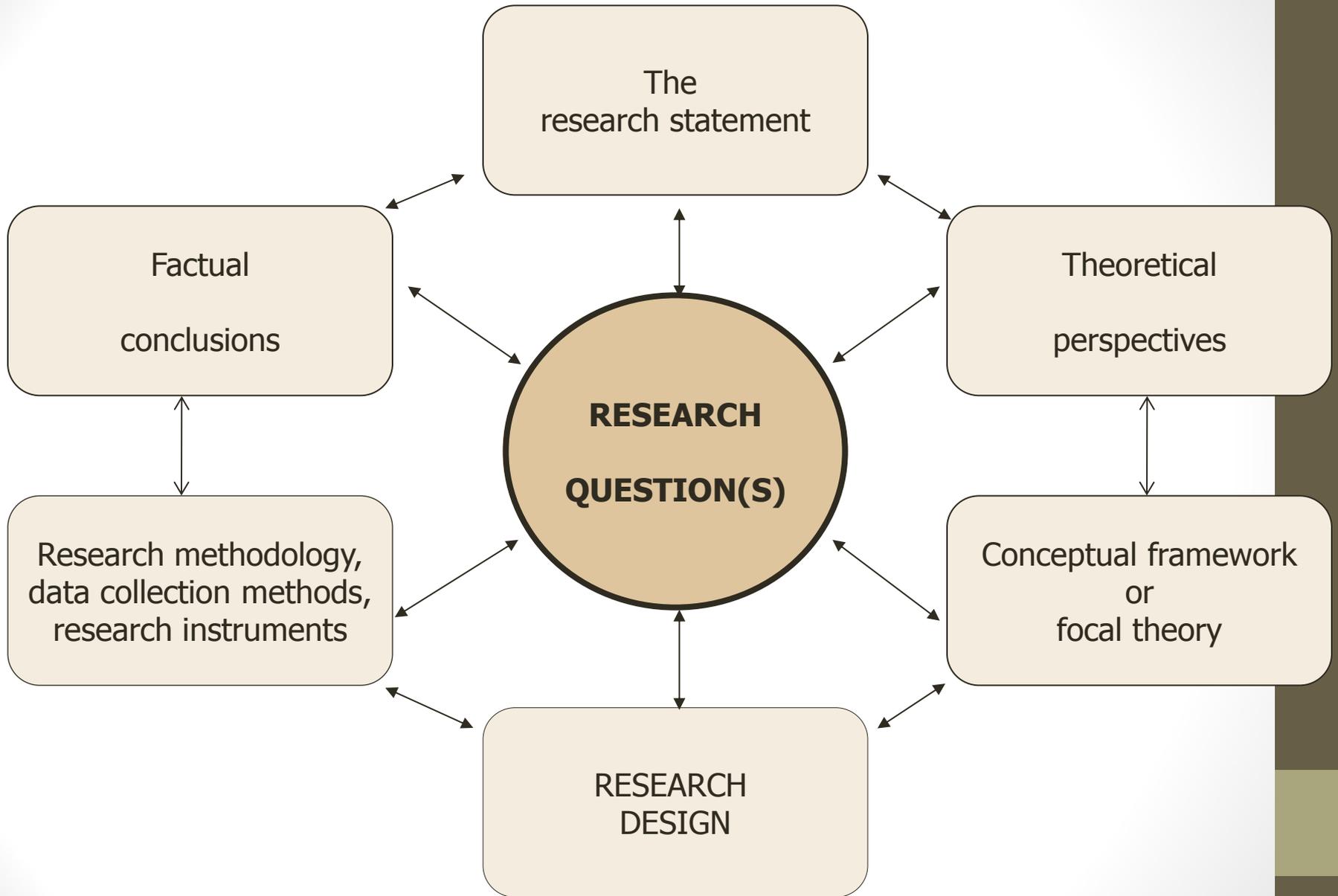
WHEN CANDIDATES 'THINK LIKE A RESEARCHER'



DOCTORATENESS AS A JIGSAW PUZZLE



SIGNIFICANCE OF RESEARCH QUESTIONS



APPLYING THE 'WH' QUESTIONS TO RESEARCH DESIGN

WHAT

is it that you want to discover / prove / disprove?

WHY

do you want to undertake this research and why is it important?

WHEN

is the investigation to be conducted and over what period?

HOW

do you intend to investigate the topic and what choices need to be made?

WHERE

is the topic located, where will it be investigated and why there?

WHO

are the respondents, why them and how accessible are they?

Answering these questions determines the research boundary.

FEATURES OF WELL-CONSTRUCTED RESEARCH QUESTIONS

CLEAR

They are unambiguous and easily understood.

SPECIFIC

They are sufficiently specific *for it to be clear what constitutes an answer.*

ANSWERABLE

It is possible to see what data are needed to answer the question ~ and how those data will be collected.

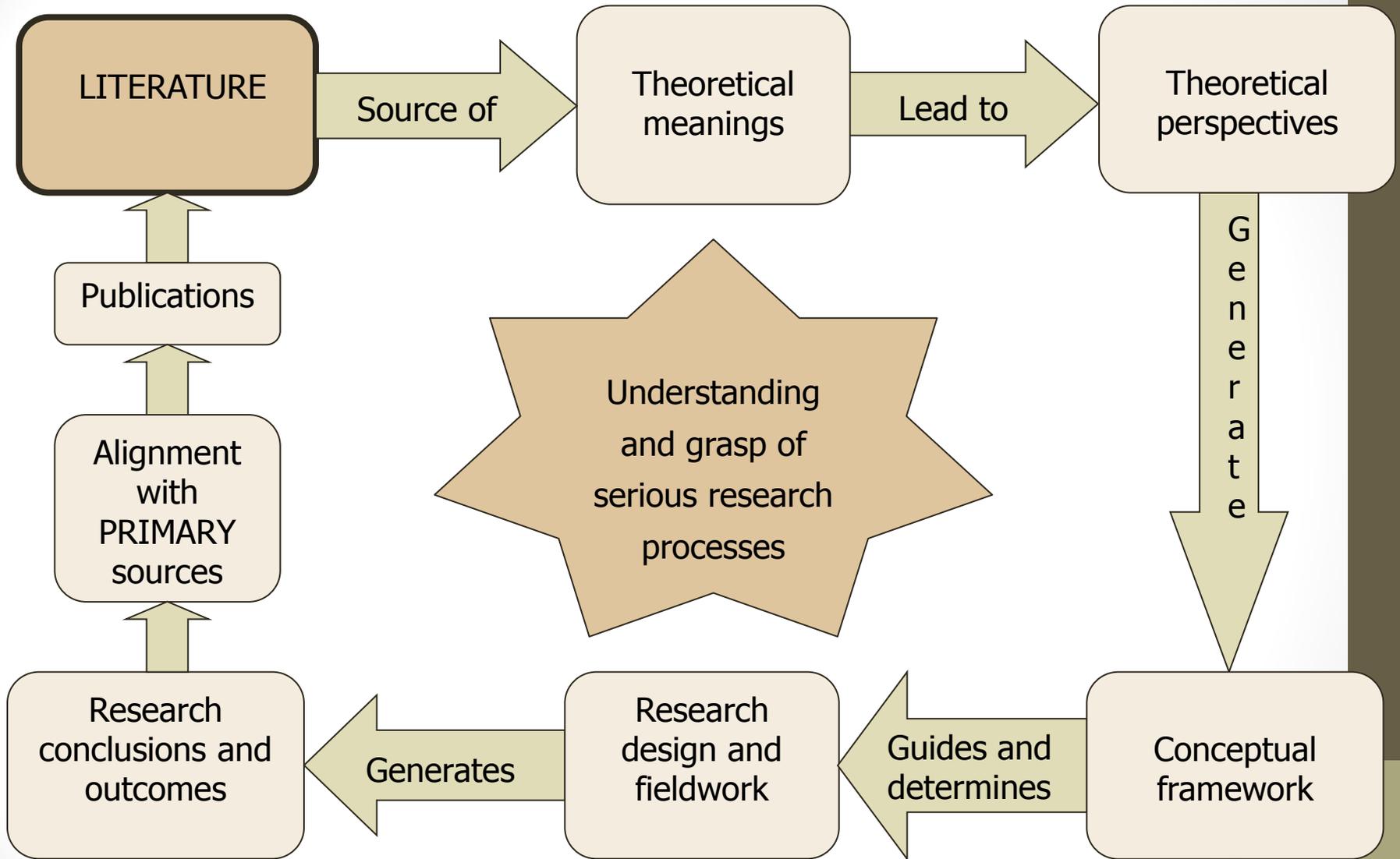
INTERCONNECTED

The questions relate in meaningful ways, forming a checkable and coherent whole.

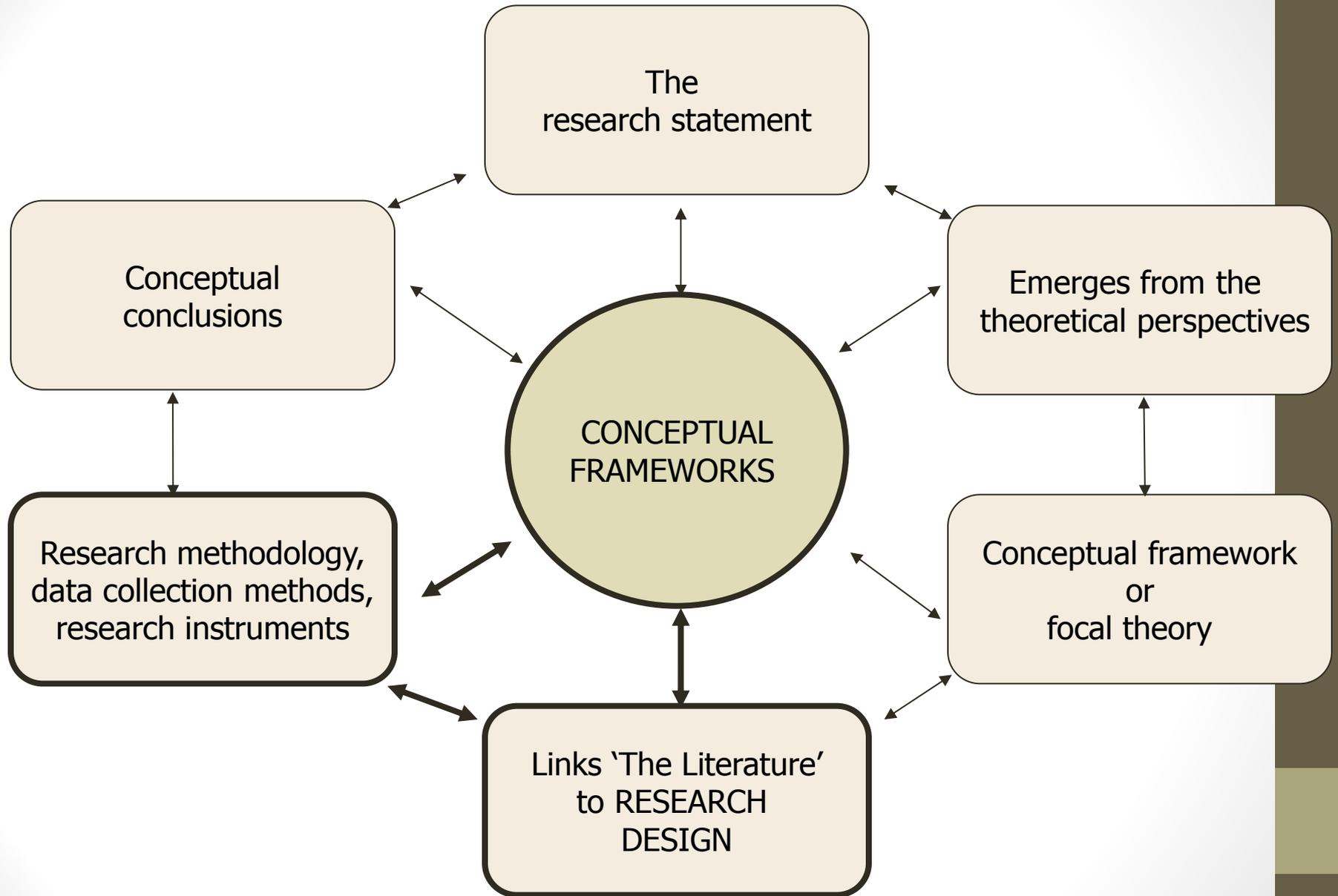
SUBSTANTIALLY RELEVANT

They are worthwhile ~ non-trivial questions worthy of the research effort that will be expended.

THEORETICAL LINKAGES FROM AND TO THE LITERATURE



CONCEPTUAL FRAMEWORKS IN DOCTORAL RESEARCH



ACCORDING TO DOCTORAL EXAMINERS

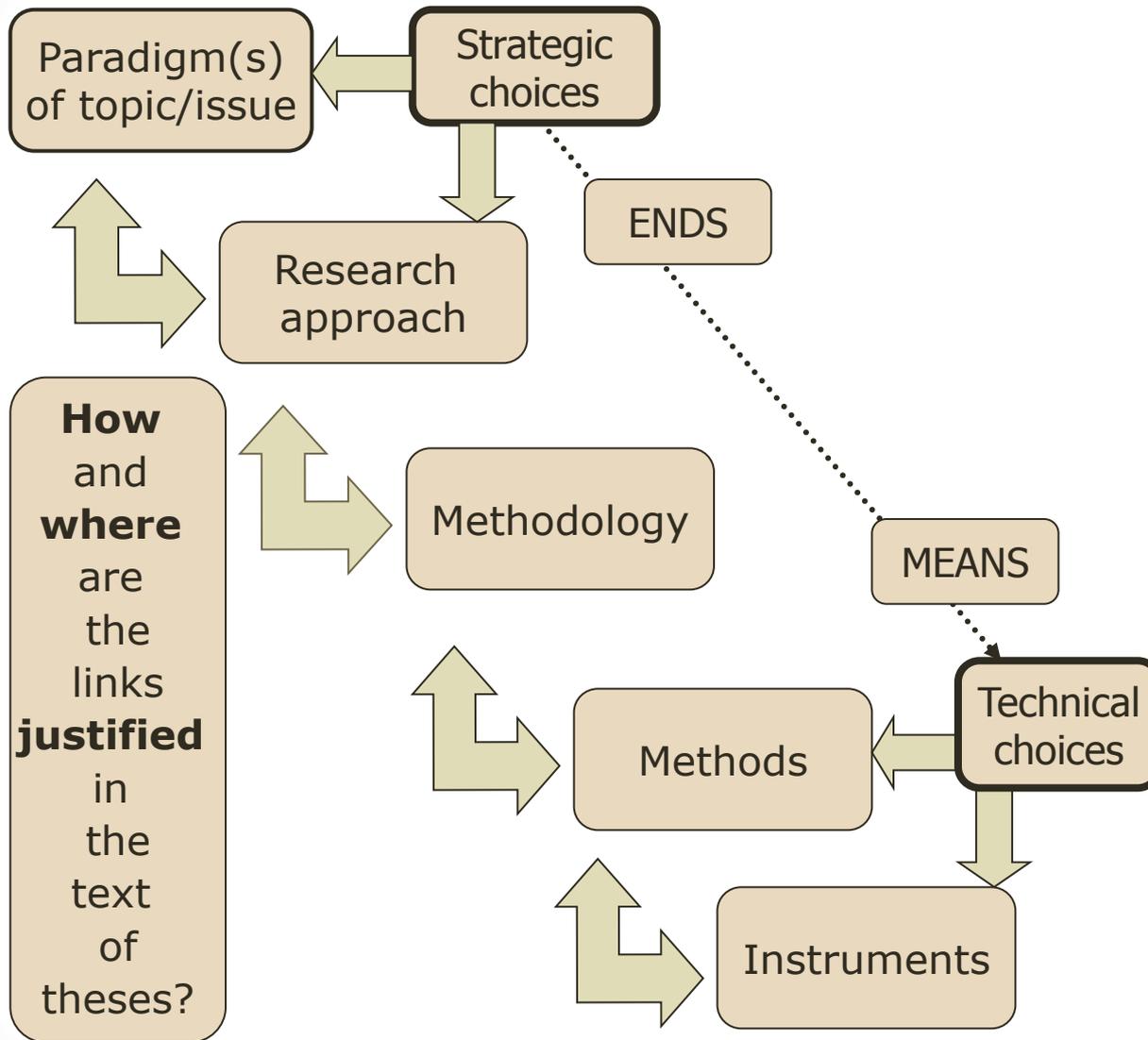
Doctoral research should display one ~ or no more than two ~ of these strategic features:

- 1 Application of conventional research instruments in new fields of investigation
- 2 Combining disparate concepts in new ways to investigate a conventional issue
- 3 Creating new understandings of existing / emerging issues
- 4 Design and application of new field instruments in a contemporary setting
- 5 Extending the work of others through a replication of their original methodology
- 6 Identification of new and emerging issues worthy of investigation and explanation
- 7 Originality in using the work of others

The appropriate sentence(s) can be used frame the research proposal, and in the opening/closing chapter of the thesis to reinforce the research intent.

Source: Trafford and Leshem, 2008: 16-17

UNDERSTANDING DOCTORAL RESEARCH AS A PROCESS



MAJOR CHOICES IN RESEARCH DESIGN

Paradigm

**Research
topic**

Assumptions

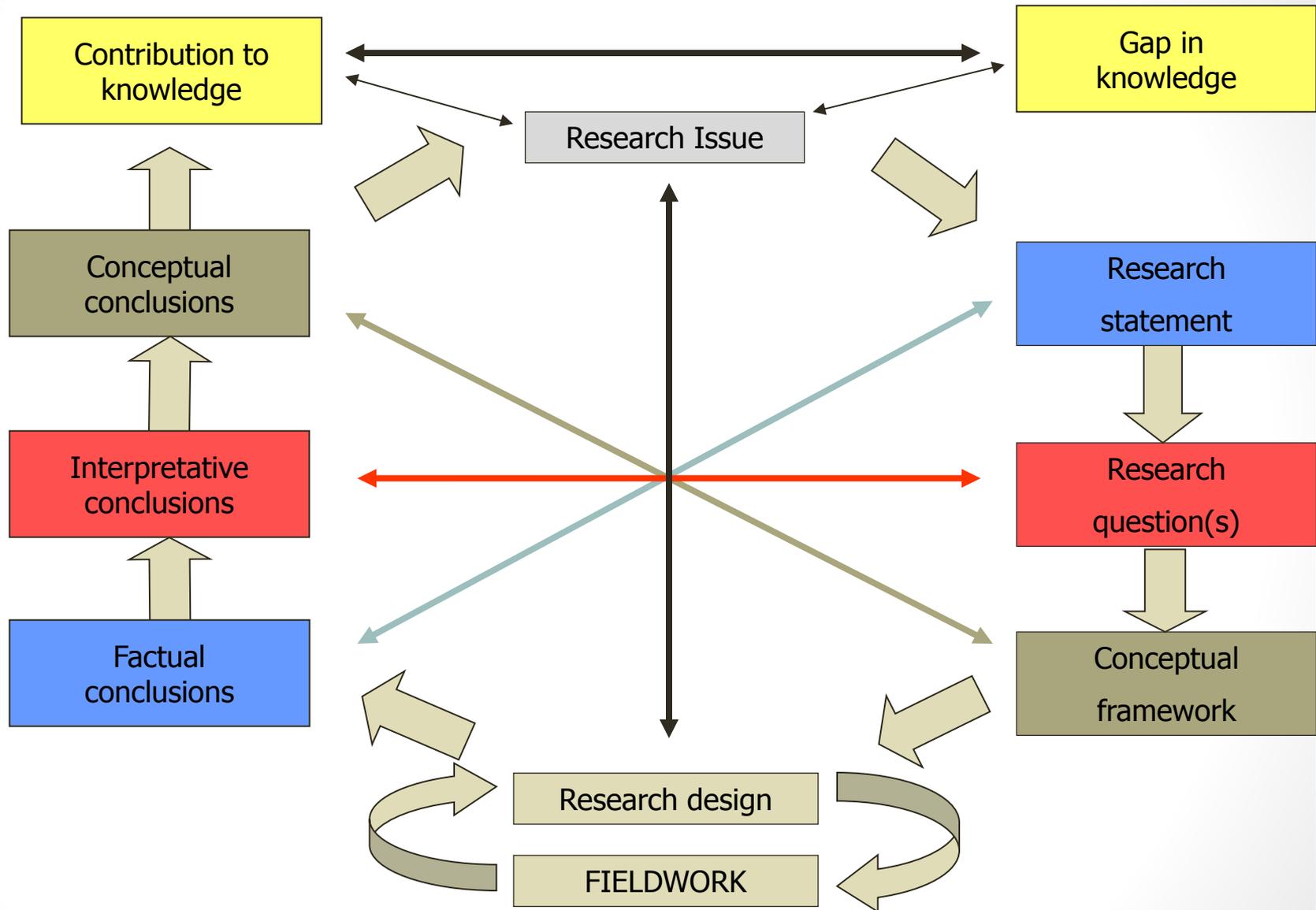
**Investigatory
approaches**

**Strong
defence
of
choices**

- Decide on the paradigms through which you see your research topic.
- This will determine the paradigm in which your research will be located.
- Define the topic within its respective paradigm
- Align the choice of investigatory approach to the paradigm

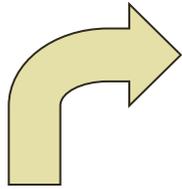
See page: Four paradigms of induction

VISION: visualising doctoral research

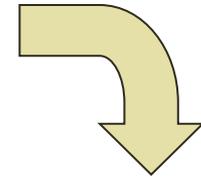


Source: Trafford and Leshem, 2008: 170

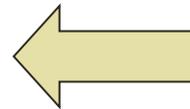
ISSUES FOR CANDIDATES TO CONSIDER



Acknowledgement of the criteria that are used by examiners to judge the scholarly merit in doctoral theses.



Constantly auditing the thesis to ensure that potential questions on the criteria are answered;
explicitly;
thoroughly;
appropriately.



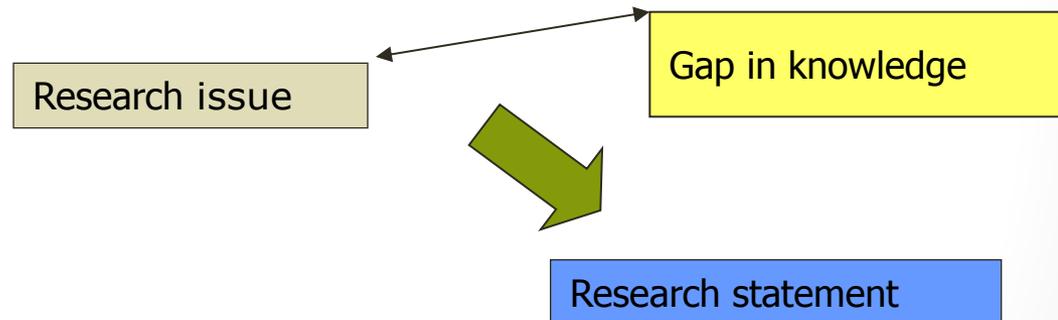
Using the criteria as indicators of academic quality when:

- 1 research is planned;
- 2 research is undertaken;
- 3 text is drafted.

You may have an idea about a possible research topic. Thinking and reading about it opens up the topic and you appreciate that it represents a gap in knowledge. As a gap in knowledge, you could then refine that into a specific research issue to be investigated.



Your research statement is derived from the research issue. This statement is normally expressed as a single sentence encapsulating all your research intentions.



Producing research questions that are clear and capable of being answered leads you into the theoretical perspectives you have gleaned from the literature. This enables you to devise your conceptual framework which is central to how your research is designed.

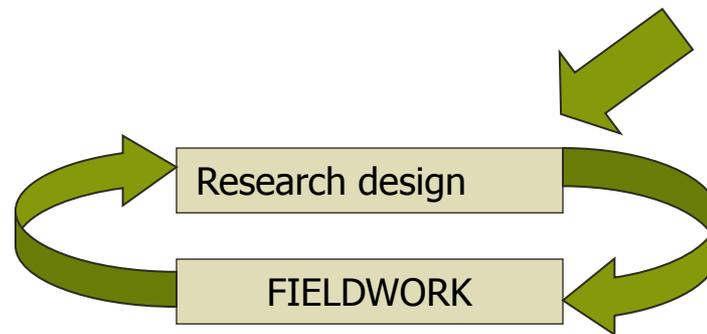


Research question(s)

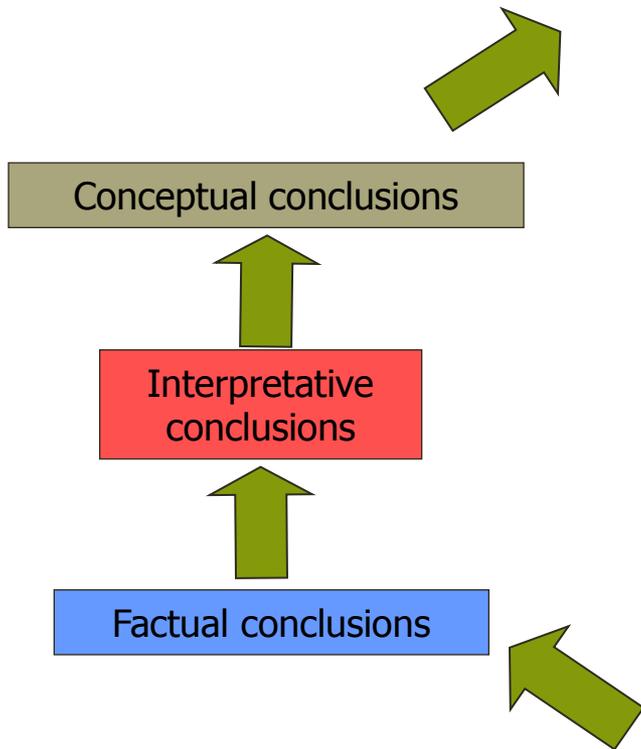


Conceptual framework

The iterative relationship between fieldwork and research design acknowledges how these features influence each other through the duration of your research.



The data that are collected then enable you to generate factual, interpretive and conceptual conclusions.

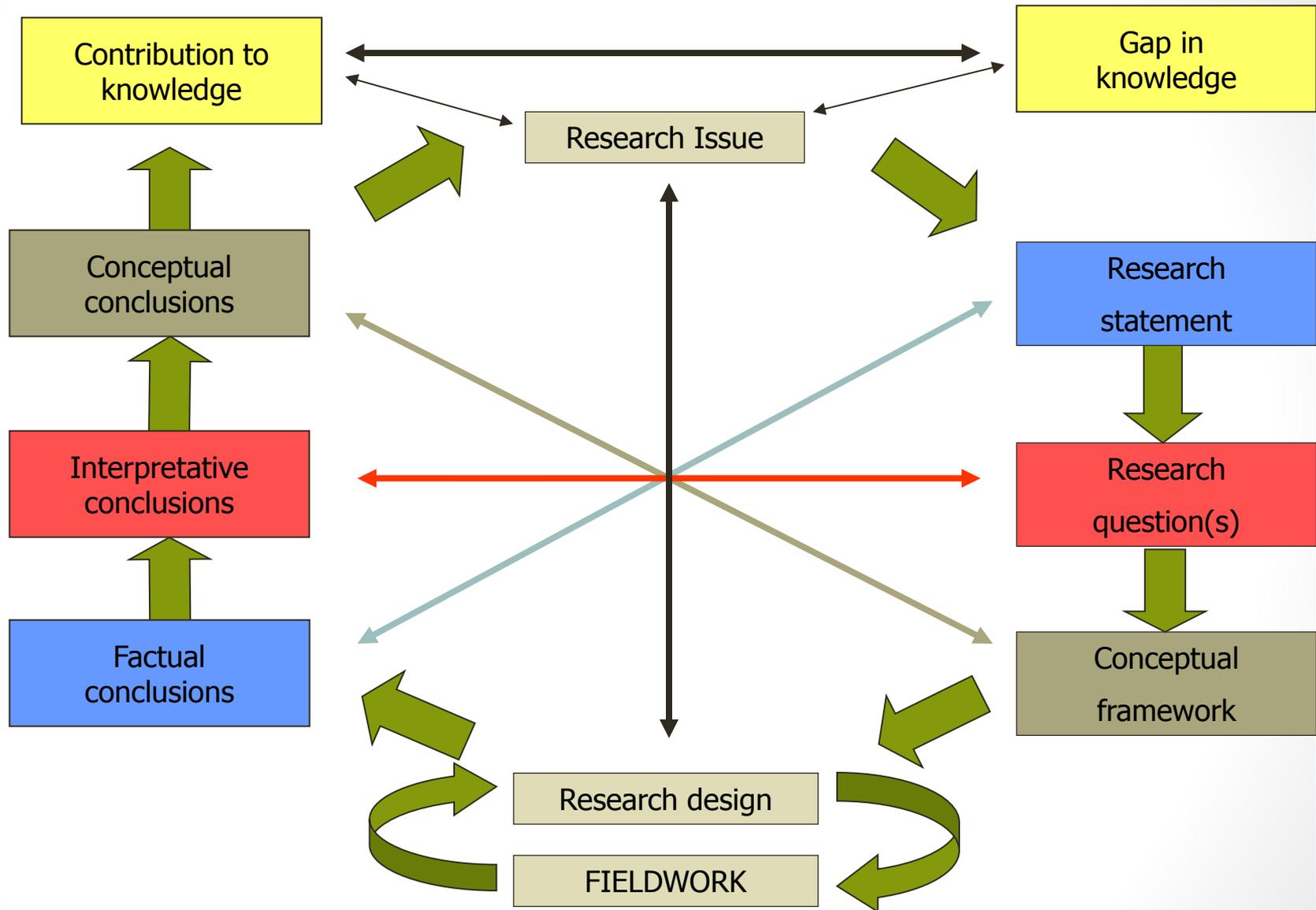


The conclusions allow you to make a modest reasonable and defensible claim for a contribution to knowledge that closes the gap in knowledge. Your contribution to knowledge relates to the originating research issue and its boundaries . This closes the circle of your research.



LINKS AND RELATIONSHIPS

VISION: visualising doctoral research



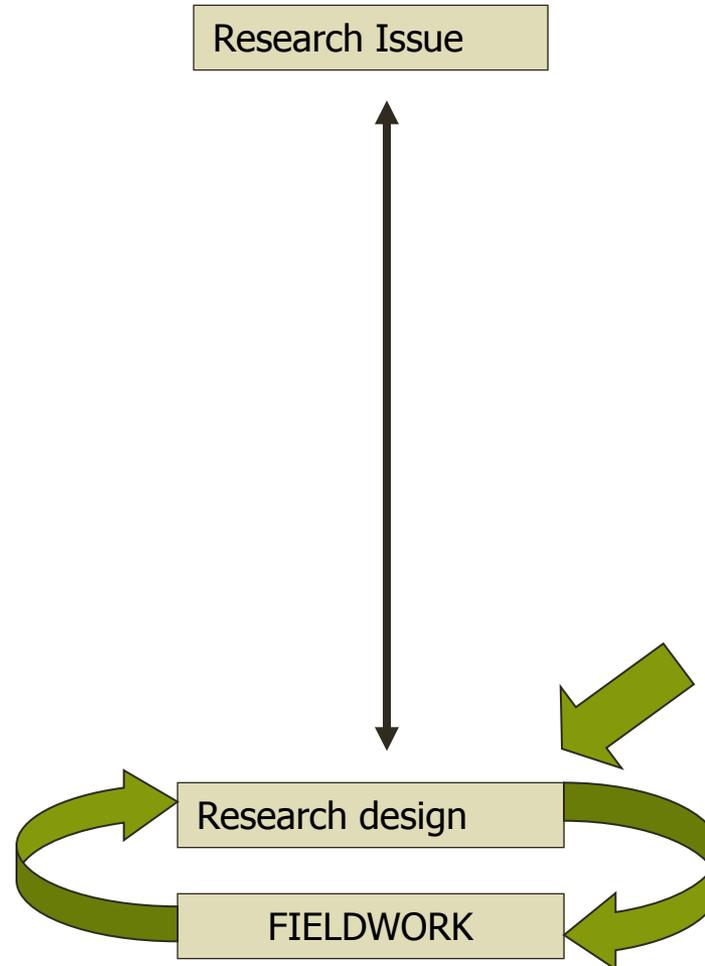
Source: Trafford and Leshem, 2008: 170

INTERNAL LINKAGES

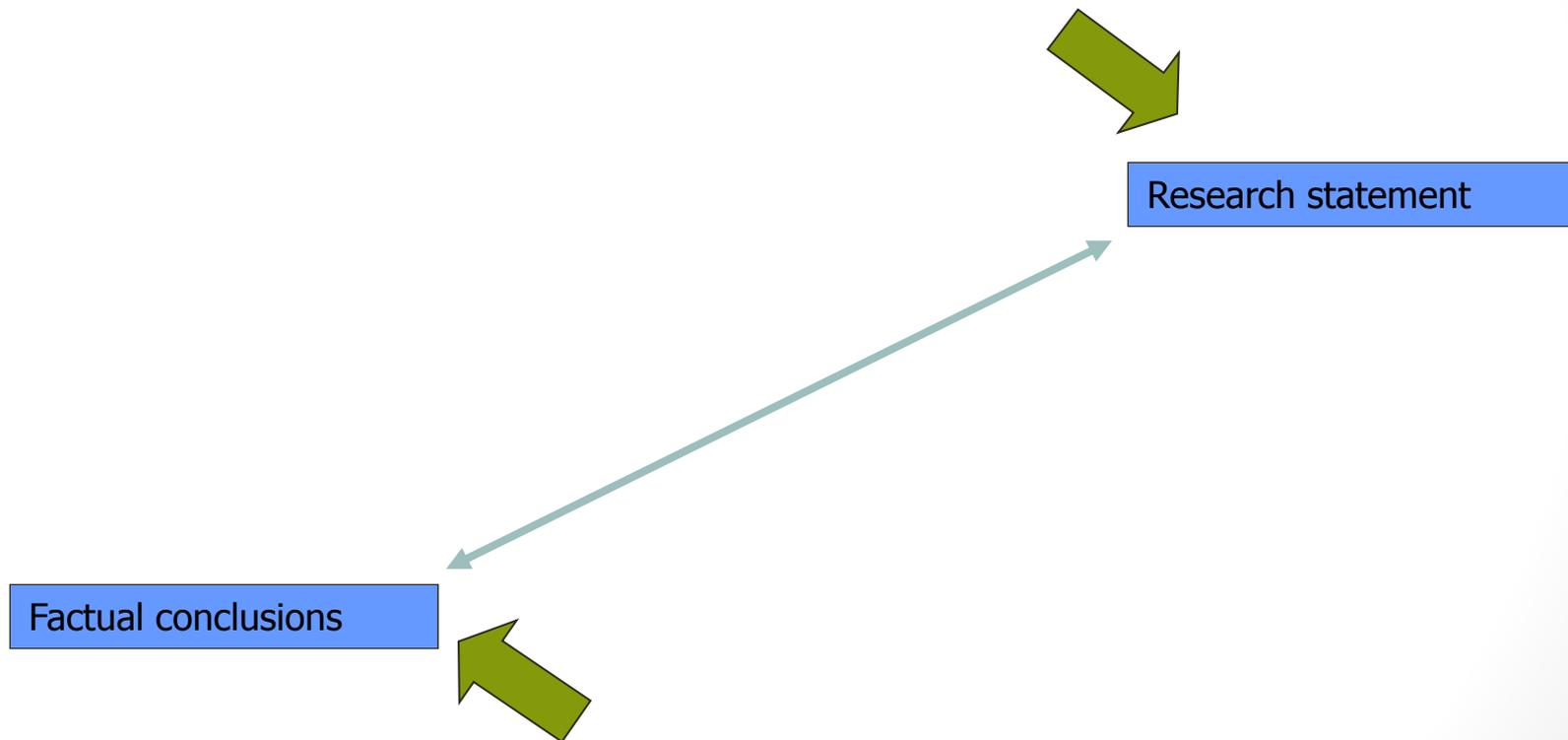
While the circle of factors offers a neat picture of the research, there is another far more important level of meaning latent inside the circle. The four diagonal double arrow-headed lines connect pairs of factors that are influential on one another.

INTERNAL LINKAGES

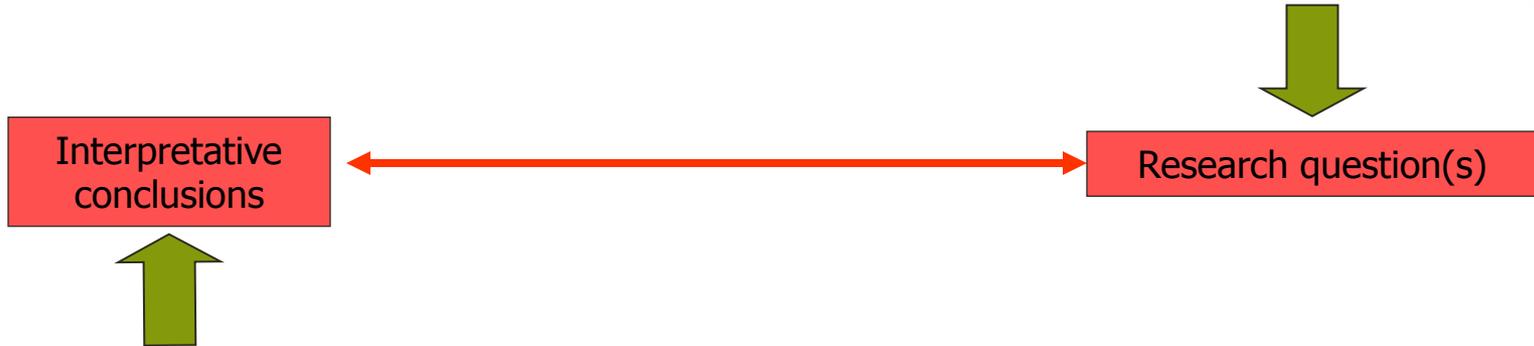
You should be able to show how the boundaries and focus of the issue are apparent in how the research was designed. The result of this is that the fieldwork should be seen to investigate and gather data on that issue and not some other issue.



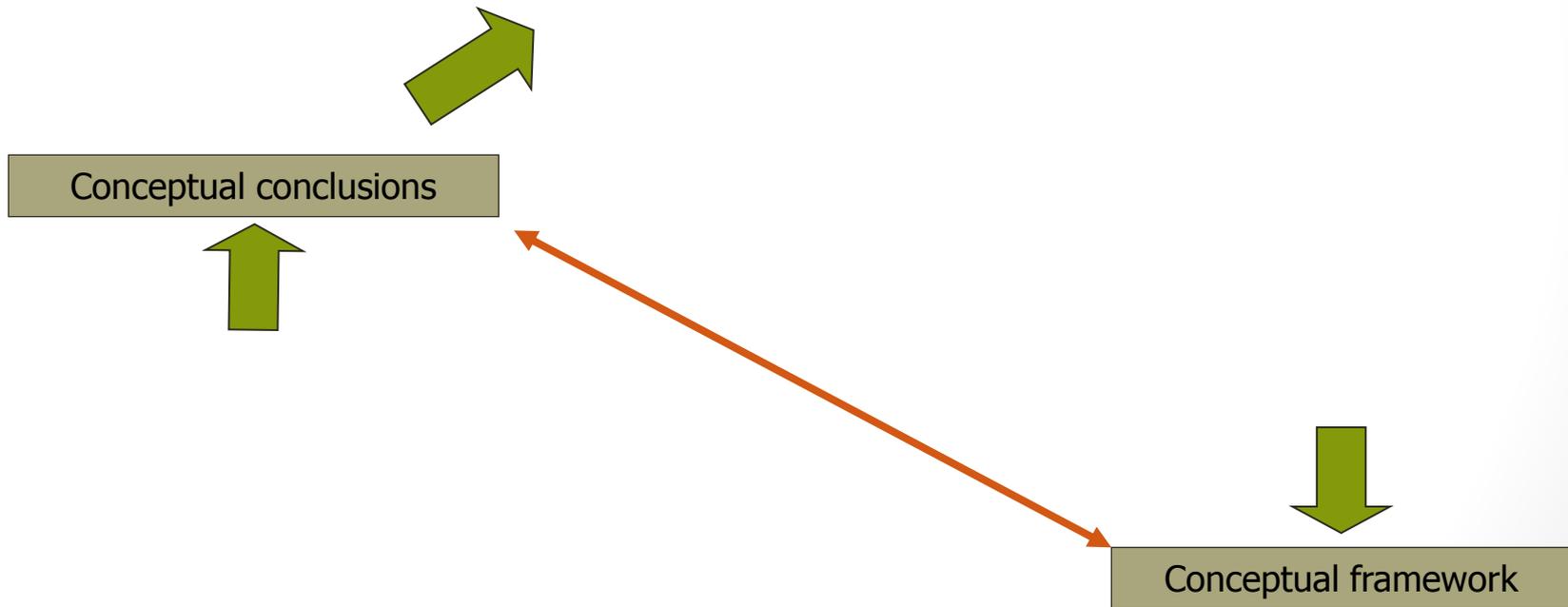
You should be able to show how the research statement relates directly to the factual conclusions that are drawn from your evidence. Both are concerned with fact-what is to be investigated and the facts that were found that related to that statement.



Answers to your research questions should emerge as you interpret, analyze and discuss your evidence. This relationship represents a higher level of thinking than the descriptive text that is associated with the previous pair of factors.



This relationship determines the scholarly and theoretical level of your research. Among the set of conclusions it is the most critical, since it demonstrates the relationship and relevance of your research to other, external research and extant theories.



THE AUDIT INSTRUMENT AS A MODEL

The model enables supervisors and candidates to:

- discuss progress in the research using a common agenda;
- plan an integrated and coherent piece of research;
- check the consistency of how the plan was carried out;
- identify where the links between the components of the research are explained in the thesis;
- use the framework as a means of explaining and defending the research with examiners and others.

USING THE MODEL

Applying the magic circle: a task

If you are in the process of writing your thesis,

If you are preparing for the defense (viva),

If you are a supervisor or examiner of a Ph.D candidate,

using the magic circle, can you identify where in the thesis are the links between the components of the research explained?

Look also in the book page: 177

Contribution to knowledge: a study of how TAR issues can be encouraged to surface and examination of how these were handled.

Gap in knowledge: lack of understanding of residual TAR issues and therefore lack of skill in helping them surface in counselling and handling them when they do

Research Issue: TAR residual issues and mental health in a Christian setting

Conceptual conclusions: what implications does my research have for the assumptions I had about congruence and synthesis? Have other assumptions been revealed?

Research statement: I want to find out how to help residual TAR issues surface in counselling and how to help colleagues address them effectively.

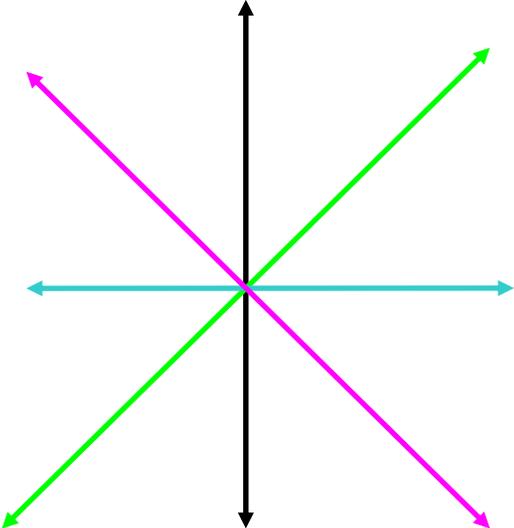
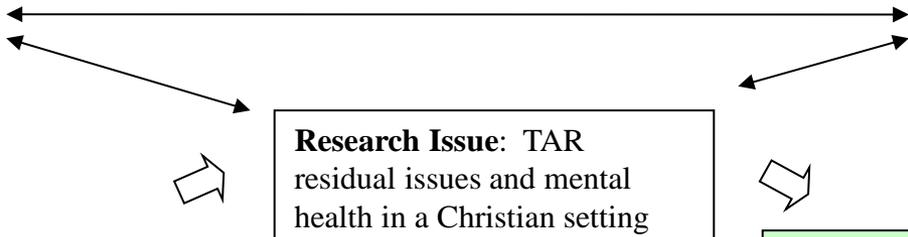
Interpretive Conclusions: How do I evaluate what presented in my sessions? How do I judge what a productive intervention is? How transferable are my findings? What were the problems with my methods in theory and in practice?

Research question: *How do elements of traditional African culture affect the psychological and spiritual health of students at Tangaza College and how best can the pastoral care team help the students resolve them?*

Factual conclusions:
Who presented TAR issues and under what conditions?
What interventions did I make?
These conclusions were/not supported by the focus groups in the following ways...

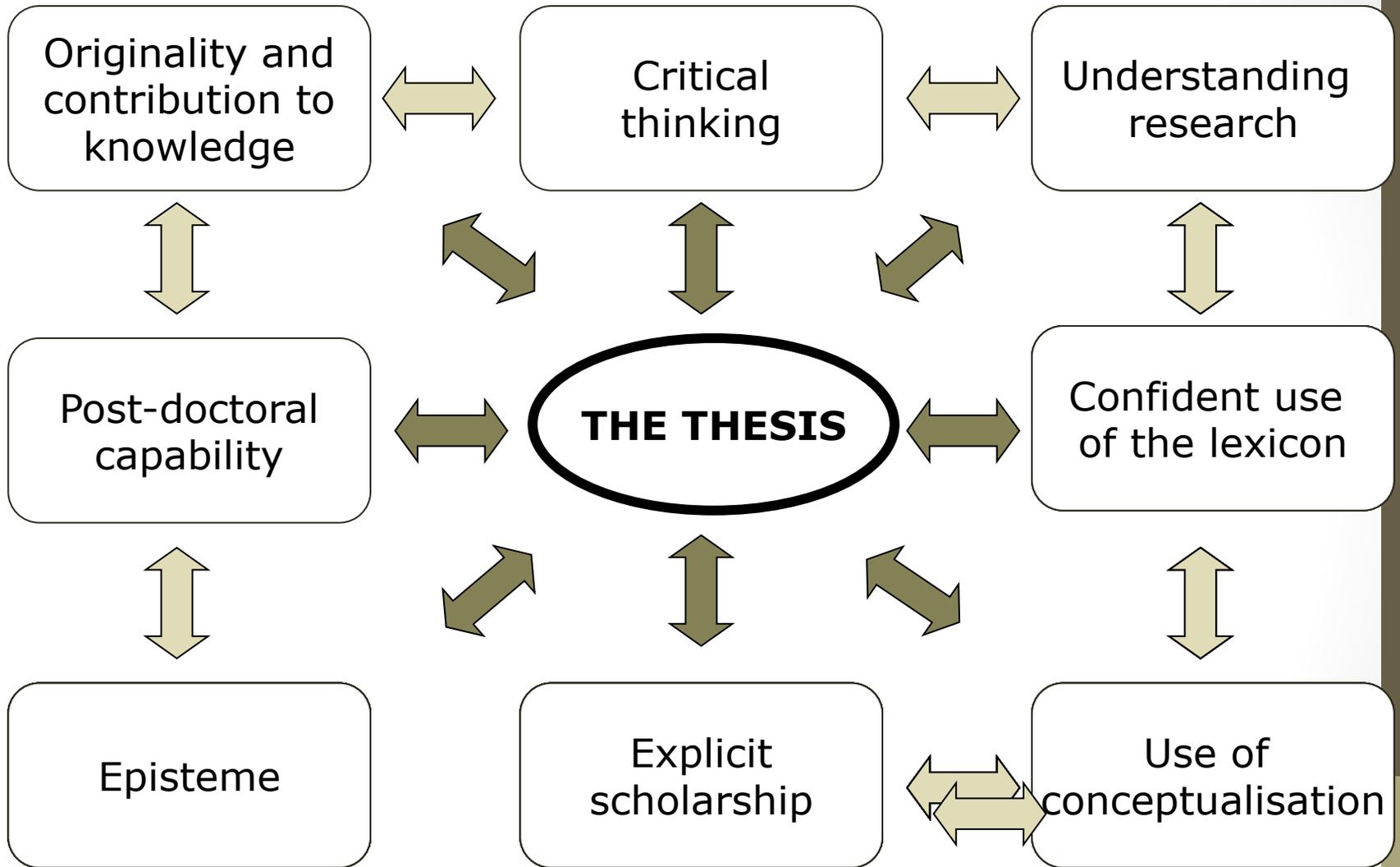
Research Design: I shall examine verbatim accounts of my clinical work as a counsellor to see when TAR topics emerge and what interventions are productive in response. I shall discuss my findings with focus groups of colleagues and students.

Conceptual framework: key concepts are implicit in my practice – fullness of life; congruence; cultural synthesis. These are embedded in different discourses and disciplines theology. My research assumptions are that congruence and cultural synthesis are linked – that healthy religion does not suppress tensions between church and culture but allows them to be explored that this promotes mental health and fullness of life



SOME CONCLUSIONS

THESES ARE EXPECTED TO CONTAIN EVIDENCE OF



AN ACADEMIC ARGUMENT

An academic argument is a tool of learning and understanding.

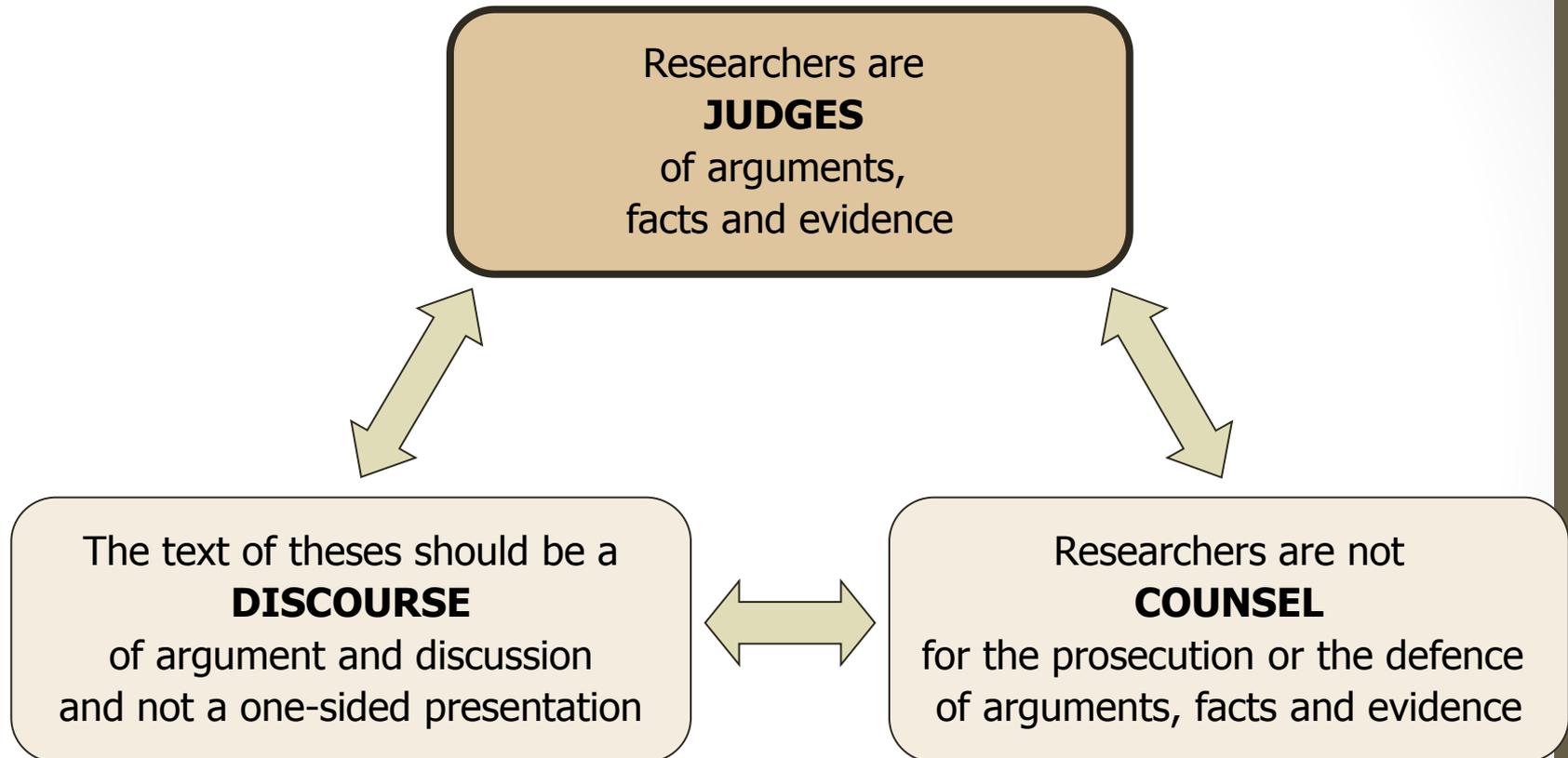
It is a form of intellectual engagement, a constructive intervention designed to contribute to a debate.

As this implies, academic argument is a type of exchange based on a sharing of knowledge, a pooling of facts and opinion.

It is ~ or at least should be ~ restless, unsettled, always trying to move forwards.

Source: Bonnett, 2008

THE DOCTORAL RESEARCHER'S ACADEMIC STANCE



MAKING THINKING VISIBLE

Fostering better thinking means making it visible, so that learners can track, direct, and improve it.

“Visible” means externalized in any manner:
speaking, writing, drawing, gesture.

Also, visual thinking emphasizes documentation to preserve traces of thinking for later reflection
-- diagrams, notes, wall charts, etc.

Source: Ritchhart and Perkins, 2008

MAKING THINKING VISIBLE BY CLOSING THE 'CONCEPTUAL CIRCLE'

High meta-level of thinking entails
expressing abstract ideas and theories.

Aligning conclusions from research with the
components of the conceptual framework
reinforces the research theoretical foundation.

Source: Leshem and Trafford, 2007. Trafford and Leshem, 2008:140

SOURCES

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