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**Report on chapters four and five of ‘Developing Research Questions**

**A Guide for Social Scientists’**

**by**

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**Chapter four: Questions, methods and indicators**

Having discussed the sources of research questions in chapter one, which are the ideas, the characteristics of research questions, that is what makes a research question as such in chapter two, and the criteria of questions and what makes them researchable in chapter three, White (2009) pursues to discuss the relationship between questions, methods and indicators in chapter four. He tackles these issues in two parts of this chapter by first studying the differences between research design and data collection and then in the second part White tries to operationalize some of the concepts mentioned in chapter two.

**Questions as the starting point of research**

White (2009) stresses the point that research questions are the launching pad for any research. Well-thought-written-structured questions would have great impact on research design and methods of data collection and would prove to be fruitful. As Punch rightly states “I use the focus on research questions as a way both of getting started in research, and as a way of organizing the subsequent project” (Punch, 2016, p. 17).

According to (de Vaus 2001) to move from research questions to research design, researchers need first to think about the research data. Research data should be well reflected in research questions because if questions do not indicate what necessary data are required to answer them, then they would run the risk of not meeting what Punch calls the “empirical criterion” (Punch, 1998, p. 44) which is something that White (2009) emphasized in chapter three when speaking about “empirical investigation” as questions would be unresearchable if they cannot be answered by “empirical investigation” (ibid, p. 59).

**Questions first, methods later**

The content of research questions takes precedence over the method of research as content has a logical priority. White here quotes Punch stating “we first need to establish what we are trying to find out, and then consider how we are going to do it” (Punch,1998, p. 21). Moreover, starting with questions before methods is a good countermeasure against overload when writing a research proposal (ibid).

**Research traditions**

Under this subsection White (2009) discusses a current and recent issue in methods, which is traditions in data collection and analysis. It is an epistemological debate on whether researchers should lean towards ‘interpretivism’ or ‘positivism’. White (2009) sees this difference as a technical one rather than philosophical. He advices researcher not to concern themselves with such debates as it would lead to unnecessary philosophical debate about ontology and epistemology, that is often exaggerated. “Do not feel that you have to identify yourself with a particular 'tradition' before you start any research — it will not necessarily make you a better researcher” (ibid, p. 93).

However, White (2009), here, does not provide any definitions for the aforementioned concepts (i.e. ‘interpretivism’ or ‘positivism’) and he refers readers to a source about the latter (without mentioning in the bibliography), neglecting the former. Perhaps he justifies that by the above-mentioned advice of not concerning oneself with such debates. However, in summary, the concepts mentioned above can be explained as “[p]ositivism (their stance) and interpretivism (our stance)” (Denzin & Lincoln, 2017, p. 231). ‘Positivism’ is what other think, which is identical with traditional empiricism (Halfpenny 2015, p.115) while ‘interpretivism is what the researcher interprets.

 **Methods-led research and 'methodolatry'**

Whites (2009) starts this subsection by citing concerns expressed in two surveys namely: Campbell et al (1982) and Taylor (2002), regarding the inclination of researchers to choose methods and techniques that are used repeatedly by researchers rather than selecting the ones suitable for answering their questions. The following quote perhaps portrays this issue in clear terms “research questions keep taking the same form, the same topics keep being researched, and a small number of methods and procedures are used over and over again” (Campbell et al, 1982, p. 121).

Preoccupation with a certain research method has been called “methodolatry” by Janesik (2000, p. 390) which is a combination of the word ‘method’ and ‘idolatry’ to describe this kind of preoccupation of selecting and defending methods excluding other methods that might be better situated to answer the research questions. This tendency is not associated with any research tradition according to White (2009) and one of its drawbacks is restricting the scope of the study since it pre-decide the methods to be used (Roboson, 1993, p. 28). Moreover, White (2009) advises researchers not to be a ‘mono-methods’ researchers because that would “work against question-led or problem-focused research” (ibid, p. 94).

Another problem of selecting the methods before the questions is the desire of following fashion in what Medawar (1979) calls a “technical gimmick” (Medawar, 1979, p. 15). In fact, Medawar advises researchers not to choose research topics just because they are fashionable rather than of benefit but White (2009) borrows this term and applies it on the selection of methods before questions. Example of this problem cited by White is the selection of certain computer software in the process of their data. “research is a much more useful and meaningful activity if it is led by questions or problems, rather than researchers' preferences for particular methods, designs or techniques” (ibid, p. 97).

**Research design and its importance**

In this last subsection of the first part of White’s chapter four, he discusses the important topic of research design. White (2009) sides with scholars such as (Flick, 1998) and (Sarantakos 1998) in necessitating the need for a research design for all kinds of research whether they are qualitative or quantitative, since there is no grounds for exclusion and it would be of benefit for the development of research, while (Mason, 1996) restricts the need for a design to the latter only.

Research designs according to White “is not about how to conduct research -the research methods- but rather about the logic of inquiry; the links between questions, data and conclusions” (White, 2009, p. 98). A research design is like the blueprint of a building. According to de Vaus (2001), which White recommends refereeing to it in designing projects and research designs come in four categories: experimental, longitudinal, cross-sectional and case-study designs, depending on the nature of the research questions. Those categories are not mutually exclusive as researchers can combine them.

**Operationalizing concepts**

In the second part of chapter four, White discusses the importance of operationalizing the concepts of the research after tackling the issue of concepts definition in chapter three. According to White operationalizing concepts follow the definition of concepts and proceeds the process of thinking about what data are needed to answer research questions. He defines ‘concept operationalization’ as “the process of transforming a concept or variable from an abstract idea into something that can be researched” (White, 2009, p. 101). He proposes using ‘indicators’ as one of the ways to operationalize concepts as he gives an example of operationalizing the concepts of an individual’s health through studying how many times an individual visits hospital, takes a sick leave and so one to serve as indicators of his or her health. Some concepts are impossible to be operationalized and some are difficult than other.

Moreover, White (2009) mentions that such an approach does not come without a problem. A researcher should be clear about what and how indicators are used. “The key consideration is what counts as evidence for the existence of a particular phenomenon, not whether numeric values are to be assigned to cases for the purposes of analysis” (ibid, p. 101). Once the processes of conceptualization, which is definition, and operationalization are done and indicators are created “these indicators can then be integrated into the research questions in a way that provides the reader with a clear understanding of exactly what data are to be collected and analysed in order to address the aims of the research” (Denscombe, 2002, p. 16).

**Unoperational concepts**

In this subsection of the part two of White’s (2009) chapter four, White attends to the concepts that cannot be operationalized or it is difficult to operationalize them. The impossibility or difficulty of operationalizing a concept is associated with its abstractness. White (2009) advises researchers to select their concepts carefully and to be transparent about the limitations of any measures they develop. He reiterates what is said above about avoiding choosing theoretical ideas just because they are fashionable. He makes his point by providing two examples and showing they can be problematic, namely: economic capital and the notion of ‘habitus’ of the philosopher and anthropologist Pierre Bourdieu.

**Chapter five Answering research questions: claims, evidence and warrant**

After discussing all the issues concerning the formulating of research questions in the four chapters of his book, White (2009) dedicates the fifth and last chapter of his work to the issue of how answers to research questions ought to be presented. He does so by tackling three topics which are claims, evidence and warrant. The author criticizes the literature on research questions for usually neglecting this element of presenting the researchers’ arguments and questions. He emphasizes the significance of this topic for “it allows readers to judge whether the claims you make (i.e. the answers to your research questions) are adequately supported by the evidence you present” (ibid, p. 112).

**Structure of arguments**

White (2009) discusses the structure of arguments, which, according to him, has not gained suitable attention by social scientists. He cites (Gorard 2002) about the existence of three elements that constitute the structure of arguments. The elements are claim, warrant and evidence, although Gorard 2002 terms them as “evidence, conclusions, and the warrant(s) connecting the two” (ibid, p. 8).

**Claims**

Claims are defined as “assertions put forward for general acceptance” (Toulmin et at. 1979, p. 29). The claims are the logical products of answering research questions and those claims should supposedly be defended by the researchers who make them, therefore the links between them and the available evidence should be thought through according to White (2009).

White (2009) offers some advice for writing the claims. These tips are shared by what has been mentioned in the previous four chapters of White’s book as researchers need to be aware of the limitations of their design, which is the construction that leads to making the researchers’ claims, and claims should be clear, precise. However, White draws the attention of researchers here to the fact that precisions depend on the judgement of the researchers because the degree of precision varies from discipline to discipline.

The limitations of claims should be clearly stated in order to be qualified as no claim is free from limitation (Booth et al. 2003, p. 135). However, qualifying claims can prove to be a difficult process since every claim has many conditions. White (2009) recommends avoiding generalization when formulating claims so terms such as ‘always, every, never’ can be suitable when the data of the research are described and conclusions are made but they are not appropriate for claims since “most findings in social science are probabilistic rather than deterministic” (ibid, p.116).

**Data and evidence**

Under this subsection, White (2009) discusses the second element of the structure of argument. White sides with the scholars who think that data and evidence are the same and can be used interchangeably while Booth et al. (2003) believe that “data are inert, however, until you use them to support a claim that answers your research

question. At that point, your data become evidence. If you don’t have more data than you can use as evidence, you haven’t collected enough” (ibid, p. 32). From that, one can conclude that the difference is a semantic one and White avoids it for practical reasons.

White (2009) then discusses differentiating between evidence, claims and warrant, however, he keeps referring to the concept of warrant whether here or in fact in the whole chapter without discussing it first, and he does not provid a definition for data or evidence in this subsection, which is supposedly discussing them. Perhaps the reason for not providing a definition for data or evidence is because those two concepts are self-evident from the author’s point of view. However, (Booth et al. 2003, p. 32) provides a definition of data which might be suited here as although data can be numbers that researchers collect, they are “anything you find “out there” relevant to answering your research question”. Boothe et al. then explain that data in humanity disciplines can be “in the form of quotations, historical facts, and so on” (ibid).

**Warrant**

The most important concept in chapter five is ‘warrant’ which occupies large space in White’s (2009) treatment of the chapter. The word ‘warrant’ with its different variations is mentioned (62) times in the chapter, apart from its deictic references. Explanations of this concept are scattered in the whole chapter and are not organized under its subsection.

According to White (2009, p. 114), “[a] warrant is a logical argument demonstrating why your conclusions follow from evidence”. Warrants are important not just because both claims and evidence are only made relevant through them but also because people could argue not just the truth of a claim or an evidence but their relevance as well. Despite their importance, warrants are sometimes neglected and only noticeable by their absence (Booth et al. 2003, p. 152). They are rarely made explicit although sometimes “the logic of some research designs (e.g. experiments) imply a warrant that is relatively straightforward” (White, 2009, p. 117).

White (2009) advises researchers of not relying on the assumptions that some of the principles are obvious to readers so they do not need to be made explicit. “One of the problems with stating warrants, however, is that we often rely on these assumptions to support our arguments implicitly, simply because they are so taken for granted. Since they form the bedrock of much of our thinking, we rarely make them explicit, for to do so seems either unnecessary, or patronizing to our audience” (ibid, p. 118). Booth et al. 2003 provide a clear example of a warrant and it is taken from an academic argument. The example is as follows:

*“a whale is more closely related to a hippopotamus than to a cow, claim*

 *because it shares more DNA with a hippopotamus. reason”* (ibid, p. 154)

No biologist, according to Booth et al. 2003, would ask “what makes DNA relevant to measuring relationship?”, but if someone, that is outside of biology circle, reads it, he or she would not understand and the writer of that sentence should offer a warrant for it:

 “*When a species shares more DNA with one species than it does with another, condition we infer that it is more closely related to the first. consequence”* (ibid)

Moreover, White (2009) states that ‘warrants’ are often explanatory and not descriptive, and may relate to more than one source of evidence. In relating that with what is mentioned in chapter two regarding the characteristics of questions (White, 2009, p. 48), it can be said that warrants can answer how and why such a claim is related to an evidence rather than what, who, when, and where.

**Alternative hypotheses**

In this last subsection, White (2009) encourages researchers to think their research questions out properly considering all their aspects. As it is important to write plausible warrants, it would be more important to present these warrants in a well-constructed and effective way by thinking out of any other explanations or what (Huck & Sandler 1979) call ‘rival hypotheses. Researchers need to convince themselves that the explanations they present are the most likely explanations and not to wait until other explanations are suggested by the examiners or critics of the research.

**Conclusions**

In chapter four and five, Whtie (2009) tackles the relationship between questions, methods and indicators and how the answers of the questions should be presented. In chapter four, he shows the importance of conducting a question-led research and avoiding a methods-led one, and he cautions researchers against identifying themselves with a particular research tradition, although he does not provide definitions for the traditions mentioned. Furthermore, He advises researchers against methodolatry. White then shows the differences between research methods and research design. Furthermore, the author discusses operationalization of concepts which calls for spending more time thinking about definitions and indicators in the early stage of the research.

In chapter five, the author examines how researchers justify and present their research questions which is something related to the research design. He discusses the importance of warranting any conclusions arrived at. Although scattered in all the chapter, he draws then attention of researchers to spend proper time thinking about the warrant of their questions and how it links claims to the evidence. He encourages researchers to improve and ameliorate their explanations, preparing themselves to defend them by thinking of any alternative hypothesis that might be suggested by the examiners or critics.

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