

Towards the construction of unobtrusive research techniques

Critical considerations when conducting a literature analysis

C J Auriacombe

Centre for Public Management and Governance
University of Johannesburg
South Africa

ABSTRACT

This article focuses on specific dimensions and processes when applying unobtrusive research techniques. In general, unobtrusive research techniques study social behaviour to eliminate bias and promote conceptual and contextual analysis. These techniques can be applied to both quantitative and qualitative research. This article advances an understanding of unobtrusive research techniques. It extends guidelines on their uses to facilitate a better conceptual understanding of how unobtrusive research techniques can be intertwined creatively with other qualitative and quantitative research methods to advance scholarship.

The article is structured as follows: Firstly, the article provides a brief explanation of methodology and research design. This is followed by an overview of conceptualising specific aspects that are related to the application and outcomes of applying unobtrusive research methods. The applications that are discussed include the literature study, as well as theoretical, conceptual and analytical frameworks. This is followed by an explanation of selective principles of unobtrusive research techniques. Hereafter, a discussion of conceptual, content and historical comparative analysis provides further insight. Furthermore, the article also discusses the strengths and weaknesses of unobtrusive techniques. In conclusion, possible steps to be followed when unobtrusive research techniques are used are also provided.

INTRODUCTION

A central purpose of any academic activity is to engage in constructing knowledge. This is achieved by developing new ways of making sense of the world. While disciplines vary in the domain, seeking, creating and questioning of knowledge and proposing new

understanding and explanation, are common to all academic and scholarly activities (Boell and Cecez-Kecmanovic 2014:258). One facet of creating a new knowledge base is interpreting research that others have undertaken and building existing knowledge through understanding, examining, questioning and critically assessing published work to advance scholarship (*cf.* Boell and Cecez-Kecmanovic 2014:258). Therefore, the quality and success of scholarly research greatly depends on the quality of the analysis and interpretation of literature.

Researchers, academics and consultants are required, in many different contexts, to engage in research and to provide decision-makers in society and government with valid results (Auriacombe 2008). These results often form the foundation on which various decisions are made (Auriacombe 2005:42 and Webb and Auriacombe 2006:588).

During the first half of the twentieth century, qualitative researchers taught generations of students through mentoring and lengthy immersion in field research. These qualitative domains primarily dealt with data collection methods and researchers' membership roles in field settings (Charmaz 2007:6). However, readers had limited access to evidence about how to tackle analysing the transcripts of collected data, as well as using implicit analytic procedures and research strategies to analyse literature. Glaser and Strauss (in Charmaz 2007:6) provide a powerful argument to legitimise qualitative research by focusing on using appropriate research techniques for analysis and measuring as a credible methodology in its own right – rather than simply as a precursor for developing quantitative instruments.

The article briefly explains the concepts of methodology and research design and provides an overview of specific aspects that influence the application of unobtrusive research methods. These include a literature study, as well as theoretical, conceptual and analytical frameworks. It also explains some principles when applying unobtrusive research methods. In addition, it provides an explanation of the following research techniques, namely conceptual; content and historical comparative analysis. It highlights the strengths and weaknesses of unobtrusive techniques and discusses the steps researchers should follow when using unobtrusive research techniques.

METHODOLOGY AND RESEARCH DESIGN

Research is a systematic process of inquiry that aims to gain evidence in order to provide an accurate representation or explanation of a phenomenon (Mouton 1996:7). When designing a research project, it is important to select methods and techniques that are appropriate to the specific research goal and study objectives. In other words, different studies use different methods and techniques that are deemed appropriate for the specific task at hand. There is a wide range of alternate research methodologies that can be used to understand social phenomena. The researcher not only selects the methods and techniques, but also the methodological paradigm: whether it is going to be a quantitative design, qualitative design or a combination of both (mixed methods) or unobtrusive research techniques (Mouton 1996:40).

It is important to note that research design and research methodology are two entirely different aspects of any research project (Mouton 2001:55).



Methodology

Methodology considers and explains the logic and philosophy behind using certain research methods. For example, it explains why qualitative methods would be more applicable to a particular project than a quantitative method. Schwandt (2007:193) asserts that methodology includes the assumptions and values that serve as a rationale for the research and the criteria standards the researcher uses to interpret data and read conclusions. "Methodology is a theory of how inquiry should proceed" (Schwandt 2007:193).

Commitment to a particular methodological frame of reference will influence and inform the study in very specific ways (Schram 2006:9). Therefore, there should be a synthesis between a researcher's conceptual framework and the methodology and research methods or techniques they choose to gather and analyse data (Auriacombe 2008).

According to Schwandt (2007:193), methodology explains

- the elements of a research problem;
- how to frame a research problem/guiding research question;
- how to choose the research setting; and
- methods that will be used to generate, analyse and interpret scientific data.

Research design

Simply put, research design is a blueprint of how the researcher plans to conduct the research (Punch 2009:114). Research designs look at different types of questions. Therefore, they are categorised according to different types of studies, in accordance with the types of questions the researcher expects the research project to answer. A research design consists of a clear research problem statement, as well as plans to collect, process and interpret the observations intended to provide answers to the research question (Singleton and Straits 2004 in Webb and Auriacombe 2006:589).

Schurink (2009) states that: "Designing your study within a specific research paradigm means that you situate it within a specific framework with interrelated assumptions, concepts, theories, values and practices that comprise the way you think reality should be viewed (ontology) and studied (epistemology)". When designing the research project, the focus should be on the research question. In addition, there is a focus on the research methodology, design, techniques and the theoretical, conceptual, as well as the analytical framework that could best clarify the research purpose and perspective (Auriacombe 2008).

THE LITERATURE STUDY

According to Hofstee (2006 in Zongozzi 2015:11), a good literature review should be comprehensive, critical and contextualised. He also argues that a literature review should be able to present the results of similar works, relate the present study to the ongoing literature-based dialogue, as well as provide a framework for comparing and analysing the results of one's study with that of others (Creswell 1994 and Boote and Beile 2005 in Zongozzi 2015:12).

When conducting a literature review, a conscientious decision also needs to be made to determine which literature to include and which to exclude. Coverage is arguably the most distinct facet of the literature review. The degree to which researchers collect and include relevant literature is a single activity that sets this expository form apart from all others (Cooper 1985 and Boote and Beile 2005 in Zongozzi 2015:12). However, a good literature review is not only limited to covering relevant literature, but must also have the following attributes (Leedy and Ormrod 2001 and Hofstee 2006 in Zongozzi 2015:12). It should:

- provide awareness of what is going on in the field (the researcher's credentials);
- outline a theoretical base for the proposed study;
- create a detailed context for the study;
- show the significance of the study;
- offer new ideas;
- indicate how other researchers have handled methodological and design issues in similar studies;
- reveal previously unknown data sources;
- highlight measurement tools that other writers have developed;
- help with interpreting and making sense of the findings;
- ensure that the researcher does not duplicate previous studies;
- ascertain the most widely accepted definitions in the discipline; and
- discover the most widely accepted empirical findings in the field.

In most conceptual studies, the literature review should be used to establish the rationale for the research and questions to be asked. The literature review helps to identify what is known about the context and focus of the study from research and, sometimes, from practice. Therefore, the literature review helps shape the study design (Creswell 1998; Merriam 1998 and Merriam and Simpson 1995).

All these aspects underscore the fact that engaging with the literature is not simply a routine task, but an intellectual and interactive development process that promotes better understanding (*cf.* Boell and Cecez-Kecmanovic 2014:258).

There are "different and often conflicting understandings of the nature of the literature review process and confusing instructions on how it should be conducted" (Boell and Cecez-Kecmanovic 2014:258). Some approaches to literature reviews suggest using formal methodology (Okoli and Schabram 2010 in Boell and Cecez-Kecmanovic 2014:258), as well as step-by-step approaches where the emphasis shifts from intellectual engagement with earlier research towards rigour, replicability and objectivity (Boell and Cecez-Kecmanovic 2014:258).

THEORETICAL FRAMEWORK

There is a direct relationship between the research question(s) and the study's theoretical and methodological frameworks (Rossman and Rallis 2012:121). As such, theoretical and methodological dimensions create the foundation for the research question that will be applied to gain an understanding of the phenomena under study. In addition, it also informs the decisions about what the relevant theory and knowledge in terms of the research question are (Babbie 2007).



A theoretical framework is important to obtain clarity about the relationships between elements or issues in a given phenomenon (Ravitch and Riggan 2011 in Ackron and Auriacombe 2016:13). A conceptual framework emerges after a thorough theoretical exploration. This reveals the scope of concepts, assumptions, expectations, beliefs, and theories that support and inform the investigation. Such a theoretical framework or 'idea context' (Miles and Huberman 1994:440) should be based on theories that embody the existing corpus of knowledge on the phenomena under investigation.

CONCEPTUAL FRAMEWORK

A conceptual framework serves as a map in the quest for understanding a phenomenon (Zongozzi and Wessels 2016:214)...“by identifying and specifying the conditions under which any entity or phenomenon is (or could be) classified under the concept in question” (Furner 2006 in Zongozzi and Wessels 2016:214). According to Trafford (2008 in Zongozzi and Wessels 2016:214), the origin of conceptual frameworks are theoretical perspectives obtained from reading scholarly literature, personal experiences and assumptions and reflections on the topic.

Simply defined, a conceptual model/framework is a pattern or a system of postulation (*cf.* Longman New Universal Dictionary 1982:630). De Coning, Cloete and Wissink (2011 in Auriacombe 2012:65) provide a more comprehensive discussion of the term model. According to the authors, a model is “a representation of a more complex reality that has been oversimplified in order to describe and explain the relationship among variables, and even sometimes to prescribe how something should happen”. In its most simplistic connotation, a model is a mental image or a description used to help understand phenomena.

The following aspects play a key role in the application of the conceptual analysis to develop a conceptual framework:

- A conceptual framework unpacks the key concepts, theories and phenomena used while preparing the research study in order to determine the relationships between the concepts and variables to develop themes and categories (Badenhorst 2007 in Auriacombe 2012:65).
- The conceptual framework also provides the basic outline for analysing data so that conclusions can be drawn. As such, it is regarded as the golden thread that runs through the entire study from the beginning to the end where final conclusions are drawn (Badenhorst 2007 in Auriacombe 2012:65).
- The conceptual framework is usually unpacked in the content chapters and is based on the literature review (Badenhorst 2007 in Auriacombe 2012:65).

A conceptual framework can be seen as the operationalisation of the study's theoretical framework. As such, it forms a key component in the research design (Auriacombe 2011:32). Qualitative research methods use a conceptual framework to develop typologies, models and theories from the bottom up (Eriksson and Kovalaine in Auriacombe 2011:97).

Conceptual frameworks are products of qualitative theorisation processes (Jabareen 2009:49). According to Levering (2002:38), it can be seen as a network of interrelated concepts that, when combined, provide a comprehensive understanding and a 'soft

interpretation' of a phenomenon. Rather than offering theoretical explanations, conceptual frameworks provide understanding, are indeterminist, and do not enable a prediction of outcomes (Levering 2002:38). Conceptual frameworks are built on ontological, epistemological, and methodological assumptions, and each concept plays an ontological and epistemological role within a conceptual framework (Guba and Lincoln 2005).

ANALYTICAL FRAMEWORK

An analytical framework or model emerges from a conceptual and theoretical framework to facilitate analysis. An analytical framework can be constructed through concept "mapping" (Miles and Huberman 1994:133). Among other things, concept mapping can take the form of an abstract framework that maps the relationships between concepts, a causal network of variables or influences (Miles and Huberman 1994:133, 249).

A theoretical framework lies on a broad cognitive scale of abstraction. As such, it is extrapolated from a conceptual and contextual framework where after the literature study reveals the causal relationships between relevant concepts and processes.

An analytical framework is a useful tool in scientific investigation, and is most applicable for variance mapping in studies of complex social phenomena. In general, analytical frameworks or models reveal patterns and causal relationships between variances or variables (Ackron and Auriacombe 2016). As such, analytical frameworks include research instrumentation, possible solution patterns, a model, as well as a method for grouping complex information (Imenda 2014:187). An analytical framework/model maps the potential dimensions or vantage points that researchers can use in their analyses (Hasna 2007 in Akron and Auriacombe 2016:5). Conceptual and analytical frameworks, flow from the epistemological paradigm that a researcher applies when examining a given research problem. Such frameworks also establish a structure that guides the research.

SELECTIVE PRINCIPLES IN TERMS OF UNOBTRUSIVE RESEARCH TECHNIQUES

Unobtrusive research techniques involve studying social behaviour without affecting it (Babbie 2001) and to counteract, or completely eliminate, bias and to promote conceptual and contextual analysis (Webb, Cambell, Schwartz, Sechrest and Grove in Huysamen 1994:136). With the exception of qualitative field research, all other modes of observation require the researcher to intrude to some degree on the subject they are studying. This is the main difference between obtrusive and unobtrusive research techniques.

Collecting data through experiments, interviews and questionnaires is essentially based on an interaction between the researcher and the respondent, the latter reacting to a situation created by the former. Conversely, unobtrusive research techniques are non-reactive and information about the respondent is gathered through public documents. As such, there is no direct interaction between the researcher and respondent. These documents can include published articles, books, archival records, published statistics, judicial records, election or census results, crime statistics and educational data. Institutional publications, solicited



and unsolicited documents, statutory, regulatory or policy documents, newspaper editorials, data published by private sector organisations, historical documents and medical or other scientific records also form part of this type of recorded data. In all these cases, certain types of errors are avoided. Respondents are not aware that they are the subject of study (Bless and Achola 1990:106).

Data obtained through mass media (newspapers, magazines or films), institutions and associations (minutes of meetings and other official documents) or data of a more personal nature (paintings, biographies, diaries, personal letters) also provides products or evidence of human behaviour that can be analysed via content analysis (Huysamen 1994:136).

Official statistics, archival records and documents that are typically collected for purposes other than their use in social and behavioural research, such as the official statistics to compare the application of the death penalty in South Africa before 1994 with that in the United States for the same period, serve as an example of how unobtrusive research techniques can be used for measurement (Auriacombe 2007:459). The sentencing can be compared in terms of the offender's race and the race and gender of the victim, while the sentence can be compared in terms of the race of the offender (Naudé in Huysamen 1994:136).

Unobtrusive methods can be used as the only source of data in a given research project. However, it has been found more useful when combined with other complementary methods (Auriacombe 2007:459). There seems to be a major difference between data compiled by a survey, using questionnaires for example, and data presented in records. The latter only provides the properties of a group or individuals and is an aggregate of separate information, whereas the former allows the researcher to retrieve data concerning a particular individual (Bless and Achola 1990 in Auriacombe 2007:459). For example, data related to school performance of learners in a Department of Education's (DoE) records might only indicate the average performance of each school in the country. Data compiled in a survey will still allow the researcher to compile the average performance rates of schools, while simultaneously indicating the specific performance of individual learners (Bless and Achola 1990 in Auriacombe 2007:460).

In terms of the above, Auriacombe (2008:78) states that the following questions should be asked: What combinations of analytical processes will be used to apply the data? Has the primary research question been adequately answered in terms of these analytical processes?

DIFFERENT TYPES OF UNOBTRUSIVE RESEARCH TECHNIQUES

This section will discuss three types of unobtrusive research techniques.

Conceptual analysis

A conceptual analysis can be seen as a "system of concepts, assumptions, expectations, beliefs and theories informing the research and is generally regarded as an explanation proposed to reach a better understanding of the social reality/phenomena that is being investigated" (Maxwell 2005:66). The underlying assumption is to assess and refine the goals; develop realistic and relevant research questions; substantiate arguments; clarify

the theoretical framework and logic or reasoning used; define concepts; justify decisions; and direct data collection and analysis. Badenhorst (2007 in Auriacombe 2011:60) explains that, “conceptualising includes a reasonable, relevant researchable problem, as well as an appropriate research design and conceptual framework”.

Therefore, conceptualising is a type of reasoning that starts with studying a range of specific individual cases, concepts or instances in order to extrapolate patterns from the data obtained in order to form a conceptual category. There are two basic ways to go about defining complex concepts:

- Inductively building a generalised theoretical definition from one’s experiences, preferences and assumptions.
- Working deductively from a generalised theory, analysing realities to see how they fit into the theory, as well as modifying theory based on the results of the analysis.

The following steps can be applied to obtain optimal clarity regarding the characteristics and meanings of concepts (Walker and Avant 2013 in Zongozzi and Wessels 2016:214) “Select a concept; determine the aims or purposes of analysis; identify all uses of the concept that you can discover; determine the defining attributes; identify a model case; identify borderline, related, contrary, invented, and illegitimate cases; identify antecedents and consequences and define empirical referents”.

In addition, conceptual analysis relies on scholarly literature and reflections on the interpretation and interrelationships of the various related concepts and variables that influence the phenomenon (Zongozzi and Wessels 2016:214).

Content analysis

Babbie (2001:305) states that content analysis is particularly well suited to studies answering the classic questions of: “Who says what, to whom, why, how, and with what effect?” There are many types of data that are suitable for content analysis. It can be used in a study of politicians on television shows; or in an interview study that investigates people’s experiences of how local public services are provided. In addition, it can be used to analyse the South African president’s annual State of the Nation Speech or the minister of finance’s Budget Speech. Furthermore, content analysis can be used to identify recurrent themes in theories, to analyse the content of a specific genre of novels, to look at reports of corruption in the media, or to make sense of observational studies of certain types of prisoner’s behaviour (Auriacombe 2007:463).

According to Auriacombe (2007:463), “Content analysis is a research technique for producing an objective and systematic description of communicative material ...This technique categorises answers into different types, and the number or category of each type is counted up... Sometimes content analysis is referred to as a form of qualitative analysis that makes use of qualitative data”. Importantly, content analysis turns qualitative information into quantitative data by converting it into themes, codes or numbers. In doing so, it not only describes the information, but also allows the researcher to perform additional statistical tests on the material, where appropriate (Auriacombe 2007:464).

Although it is used in conjunction with qualitative data, content analysis is not qualitative analysis. What content analysis does is to turn qualitative information into quantitative data, by



converting it into numbers or categories. In doing so, it describes the information and allows the researcher to perform additional statistical tests on the material, where appropriate. The most commonly used one is chi-square, because a content analysis provides the researcher with nominal data. Content analysis is not a substitute for qualitative analysis, but it does give a general, if rather simplistic, way to look at qualitative information (Auriacombe 2007:464).

In content analysis, researchers “examine a class of social artifacts that are written documents” (Babbie 2001). More than just a single technique, content analysis is a set of “methods for analysing the symbolic content of any communication, whether verbal or nonverbal” (Singleton and Straits 2004). The basic idea in content analysis is to reduce the total content of a communication to a set of categories that represent some characteristic of the research interest. Content analysis has been applied to written documents with varied and complex content, such as newspaper editorials, theories, political party platforms and manifestos, novels and recorded speeches (Auriacombe 2007:464).

Some bias might arise from lack of information on the actual way the recorded data was collected; the sample characteristics; the operational definitions; the instruments used or the bias introduced by the person who has collected the data. A population census is an example of where these types of problems frequently surface (Bless and Achola 1990:107).

With content analysis, the researcher must ensure that the chosen categories are appropriate for the data. That generally means that the researcher needs to spend a lot of time examining the data and their research interests, so that they can be sure that the categories reflect their subject of interest. However, if the data is complex and meaningful, such as paintings at an art exhibition, some information is always lost when content analysis is used. Therefore, the researcher must do a proper qualitative analysis if they want to retain any of that richness in the data (Auriacombe 2007:464).

As with other research methods, sampling is a critical issue in content analysis. Sampling is even more complex in content analysis than in other research methods. This is complicated by the fact that the unit of observation differs from the unit of analysis. Therefore, a content analysis researcher should be clear as to what constitutes the unit of observation and what constitutes the unit of analysis. The sample selection will largely depend on the unit of analysis.

For example, a researcher is interested in using content analysis to study whether top Johannesburg newspapers (*Business Day*, *City Press*, *Financial Mail*, *Mail and Guardian*, *Star*, *Sunday Times*, and *Sunday Independent*) are pro- or anti-government (Auriacombe 2007:465). If the unit of analysis is each newspaper, then the sample design should select all seven newspapers. If the editorials are the units of analysis, the sample design should select all the editorials in each paper. If the front page is the unit of analysis, the sampling design should select the front pages of all seven newspapers (Auriacombe 2007:465). Sproull (1988) points out that even if one plans to analyse some body of textual materials, the units of analysis might be words, themes, characters, paragraphs, items (eg a book or letter), concepts, semantics, or combinations of these.

When designing the sample, the content analysis researcher should establish the universe to be sampled from. In the above example of Johannesburg newspapers the researcher will need to establish the period of the study – how many days? Which day of the week? Which section(s) of the paper will the researcher read? How many stories or paragraphs will the researcher read per page? (Auriacombe 2007:465). Any of the conventional sampling methods,

which include simple random sampling, systematic sampling, stratified sampling and cluster sampling, can be used to select a sample in content analysis (Auriacombe 2007:465).

While there are many ways of quantifying the data in content analysis, four of the most commonly used basic quantification systems include time/space measures, appearance, frequency and intensity (Singleton and Straits 2004). In some cases, it is sufficient to simply record whether a given category **appears** in a recording unit. The most common method of measuring content is in terms of the **frequency** with which a given category appears in the contextual unit. Lastly, when attitudes and values are the objects of the research, the researcher may resort to measures of **intensity** (Auriacombe 2007:465).

Historical/comparative analysis

Historical/comparative analysis is a qualitative technique of which the main resources for observation and analysis are historical records (Auriacombe 2007:466). Comparative is included in this method's name to distinguish it from historians who may attempt to describe a particular set of events. Historical/comparative social science researchers seek to discover common patterns that recur in different times and places (Babbie 2001). Historical/comparative research extends beyond a mere collection of incidents, facts, dates or figures. It includes the study of the relationships among issues that have influenced the past, continue to influence the present and will probably affect the future (Glass 1989).

It is important to understand the historical nature of phenomena, events, people, agencies and even institutions. In many ways, it may be as important as understanding the items themselves. It is impossible to fully evaluate or appreciate advances made in knowledge, policy, science or technology, without some understanding of the circumstances within which these developments occurred. Knowledge of the past provides necessary information to be used in the present in order to determine how things may develop in the future (Auriacombe 2007:466).

There is an extensive corpus of data available for analysis in historical/comparative research. Four types of historical data sources are used, namely; oral records, artefacts, quantitative records and secondary sources. Primary sources are documents written by a witness to the events, whereas secondary sources are secondary versions and, therefore, less accurate. Primary sources include documents, artefacts/relics and oral testimony records (Auriacombe 2007:466).

Documents: These are records and written information of actual people in, or witnesses of, an event. Other examples are minutes and records of formal and informal organisations, autobiographies and biographies, books, films, recordings, reports, newspapers, etc. (Auriacombe 2007:466).

Artefacts/relics: These are the remains of a person or group (eg buildings, sites, equipment, furniture and so on). The relics often give valuable clues to how things were conducted daily in the past (Auriacombe 2007:466).

Oral testimony: This is the verbal account of a witness. This category can include tales, myths, ballads, songs and rhyming games that can be obtained in personal interviews as witnesses relate their experiences and knowledge (Auriacombe 2007:467).

Secondary sources: These are used as back-up data and when primary data is not available. The writer of the secondary source merely reports what the person who was



actually present said or wrote. This secondary-source material does not have as much worth or validity as a primary source. Errors often occur when information is transmitted from one person to another. A history textbook is a well-known example of a secondary source (Auriacombe 2007:467).

Historical/comparative researchers cannot create data; they work with existing data. However, some of data may be unknown at the start of the research and only comes to light through the investigation (Auriacombe 2007:467). In general, quality historical/comparative research depends on sufficient primary data, rather than secondary data (Singleton and Straits 2004). This is because emphasis is placed on credible testimony and the accurate description of a past event.

Data used in historical/comparative research has a life of its own, as it was not created for research purposes. The data was created for someone else's purpose, or for administrative functions (Auriacombe 2007:467). Therefore, the data may be biased, distorted and somewhat invalid when used for other purposes. The researcher must evaluate the data critically, establish the authenticity of the source, include the date and author, as well as evaluate the accuracy and worth of the statements. The central role of the researcher is to interpret data in the light of historical criticism. Each fact and supposition must be carefully weighted and added to the case, leading to the research conclusion. Most researchers organise the data either by date or by concept/issue.

After authenticity has been established, the researcher still needs to evaluate the accuracy and validity of the data. The researcher needs to ensure that the data reveals a true picture. Were the writers honest or biased? Were they too antagonistic or too sympathetic? (Auriacombe 2007:468). Were they sufficiently acquainted with the topic? What motives did they have to write about or record the event or person? How long after the event was the record made? Does the account agree with other accounts? What was the purpose and in what circumstances was it produced? Is it complete, edited or altered? Was the author an expert on the subject or a lay person? Is it liable to memory distortion? Was the author partisan, or a supporter of a particular course of action? (Auriacombe 2007:468).

Historical/comparative evidence, such as a single case study, cannot be repeated. As there is no control group, the researcher cannot be sure that one event caused another. The best mode of action is to establish a plausible connection between the presumed cause and the effect. Even if bias is detected, it does not mean that the document is useless. A prejudiced account can reveal the pressures and political processes of the time. The main aim of document analysis is that everything should be questioned (Auriacombe 2007:468).

As data collection and analysis progresses, the historical/comparative researcher synthesises and documents the data. This can be compared to writing a literature review. It is a case of constantly revising, reflecting, obtaining criticism and advice from others, in order to develop the most logical organisation and valid conclusions from the evidence analysed. It is a difficult task to take seemingly disparate pieces of information and integrate them into a meaningful whole.

In this analytical process, Babbie (2001) suggests that the researcher's imaginative understanding breathes life and meaning into the evidence being analysed. The researcher also attempts to find patterns among voluminous details that describe the subject matter of the study. Lastly, often, historical/comparative research is informed by a particular theoretical paradigm (Auriacombe 2007:468).

Singleton and Straits (2004:366) provide five elements of a historical/comparative analysis that consist of:

- “Reconstruction of past events, which emphasise the accurate description of *what* happened.
- Application of a general theory to a particular historical case(s), which focuses on *how* the theory applies.
- Tests of explanations of historical events, which examines *why* a specific event occurred.
- The development of causal explanations of historical patterns, which also analyses why an event occurred but seeks a more general understanding of social phenomena.
- The use of history to understand the present, or explain *how* and *why* particular phenomena came to be”.

STRENGTHS AND WEAKNESSES OF UNOBTRUSIVE RESEARCH TECHNIQUES

Like all other research methods, unobtrusive research has strengths and weaknesses. In terms of official and archival sources, unobtrusive research methods are characterised by non-reactivity. However, the advantage is that it is easy and cost effective to obtain data – especially with regard to large-scale, macro-level investigations (Huysamen 1994:138).

In addition, these sources may provide information about human reactions to events, such as tsunamis or political riots, which researchers cannot create for practical or ethical reasons (Huysamen 1994:138). As this type of large-scale information is often collected at regular intervals, such as census statistics, it makes trend analyses possible. Although official statistics do not involve excessive time and costs to collect, the screening process and the search for evidence to rule out alternative explanations may indeed require a considerable effort (Huysamen 1994:138).

It is often difficult to transform available information into indicators of the appropriate constructs. As such, the construct validity of the data obtained may occasionally be suspect. As the researcher is not in a position to ensure that original data collection took place systematically, there may be doubts about whether the obtained data is representative of the relevant universe. AIDS-related deaths within different population groups, for example, would be comparable if a greater percentage of one group’s AIDS deaths took place at home instead of in hospitals and clinics, as at home deaths often go unreported (Auriacombe 2007:469).

A summary of the strengths and weaknesses of unobtrusive research methods is contained in Table 1.

Unobtrusive measures are also endangered by sources of error, which results from records that might contain institutional biases. These reports are sometimes written in a way to safeguard the institution’s interests and to fulfill some short- or long-term goals. They will present facts to support the institution’s efficiency or the need for more funds. As such, facts presented may be distorted. One common bias is introduced by mentioning only certain facts and omitting others. For instance, political considerations may dictate inflating or deflating the occurrence of organised crime and robbery in a country (Bless and Achola 1990:107).



Table 1: Strengths and weaknesses of unobtrusive research methods

Strengths	Weaknesses
Economic in terms of time and money. No large staff or equipment required.	It is limited to examining recorded communication (oral, written or graphic).
Safety is assured. It is easier to repeat a portion of the study or entire study if something goes wrong.	The measure may not be valid.
It permits the study of processes occurring over a long time.	There could be slippage in the recording of data or some records might have been destroyed over time.
It does not affect the subject being studied.	Data may not be 100% subject appropriate.
Reliability is strengthened by the concreteness of materials studied and the ability to code, record and even record again, which ensures that the coding is consistent.	Erratic record collecting and keeping or some areas where no research has been conducted.
It is convenient and easy to execute.	Certain data, such as police or military records are kept secret.
There is no researcher bias affecting respondents' responses.	Records might include institutional bias, such as where reports are written in a way to support the efficiency of the institution or a need for more funds.

Source: (Auriacombe 2007:469)

Another source of error is related to erratic record collecting and keeping, where data collection may be terminated for political or financial reasons, some records might have been destroyed (for example before a new political dispensation); and a lack of research in certain areas (Bless and Achola 1990:107). Another limitation of the unobtrusive research method arises from the secrecy of certain data. Many information sources are not available to social scientists, while some research topics may not be encouraged or may even be prohibited. These topics may focus on multi-national transactions, police records, military issues and court cases. More generally, when an important decision is made, the end result is communicated to the public. However, there is no reference to the decision-making process, the type of discussions or arguments and internal conflict. This important information might not be accessible to researchers (Bless and Achola 1990:107).

STEPS INVOLVED WHEN USING UNOBTRUSIVE RESEARCH TECHNIQUES

The following steps are involved when unobtrusive research techniques are applied as the chosen method of investigation:

Developing theoretical propositions

Once all the aspects regarding the paradigm perspectives for the research (representing different sets of values and beliefs) are determined through a literature review, and the concepts, variables and relationship between the variables are identified, the theoretical propositions can

be developed. A proposition can be seen as the generic name for any statement of a relationship between two or more variables in asymmetrical relationships (focusing on predictions) and symmetrical relationships (focusing on explanation) (Bailey 1978 in Auriacombe 2009:830). Concepts are “the building blocks of propositions, just as propositions are the building blocks of theory... They have been given different names depending upon their theoretical uses, hence, sub-types of propositions include hypotheses, empirical generalisations, axioms, postulates and theorems” (Auriacombe 2009:830 and *cf.* Benecke 2006).

When considering the link between theory and research, two key issues are at stake. “Firstly, there is the question of what form of theory one is talking about...Secondly, there is the matter of whether data is collected to test or build theories” (Bryman and Bell 2003:7). After investigating literature on theory and qualitative research, the following four broad aspects are delineated (Auriacombe 2009:830):

Firstly, there is no generally acceptable definition of theory. It is difficult to find a precise definition of theory because scholars, academics and philosophers of science working in various academic disciplines have defined it in so many ways (Flinders and Mills 1993).

Secondly, attempts to formally define theory are criticised and regarded by Silver (1983 in Anfara and Mertz 2006: xiv) as robbing it “...of its true beauty, its emotional significance, and its importance to everyday life”. According to Silver (1983 in Anfara and Mertz 2006: xiv), it is not an easy task to understand theory and its relationship to the research process. “...to travel into someone else’s mind and become able to perceive reality as that person does”.

When considering theory, a number of prominent local scholars (eg Mouton and Marais 1990; Mouton 1995 and De Vos *et al.* 2002 in Auriacombe 2009: 839) discuss its components or “building blocks”. These are concepts, definitions, empirical propositions, statements, conceptual frameworks (typologies, models and theories), research traditions or very broad theoretical paradigms.

Finally, theory is distinguished in terms of its level of abstraction, such as “grand theories” and “theories of the middle range”, as pointed out by Merton (1967) and its applicability, according to Glaser and Strauss (1967) as “substantive theories” and “formal theories”.

For Merton (1967) “grand theories operate at quite an abstract and general level”, and generally offer limited indications “as to how they might guide or influence the collection” of data during the research process. Middle-range theories “operate in a limited domain” and “represent attempts to understand and explain a limited aspect of social life” (Bryman and Bell 2003:427). These theories consist of abstract renderings of specific social phenomena that are grounded in data. The difference between substantive and formal theory was introduced with the development and usage of grounded theory, which is regarded as the most frequently used qualitative data analysis approach (Bryman and Bell 2003:427).

Substantive theory describes what goes on in a particular type of social setting and no claim is made that it can be applied to other situations. Therefore, it is a theoretical interpretation or explanation of a delimited problem in a particular area or case, such as education, family relationships, formal organisations, management relationships, and management communication (Charmaz 2007:189).

Formal theory is less specific to a social setting and, as such, applies to a wider range of disciplines and problems than substantive theory (Benecke 2006:27). It can be seen as a theoretical rendering of a generic issue or process that cuts across several substantive



(specific) areas of study. The concepts in a formal theory are abstract and general, while the theory itself specifies the links or relationships between these concepts. For example, theories that deal with identity formation or loss, the construction of a culture, or the development of ideologies can help us understand behaviour in other areas, such as juvenile gangs, the socialisation of professionals or the experience of immigrating (Charmaz 2007:189).

Mapping

Mapping is a “distinct activity which aims to provide a systematic analysis of relevant ideas, findings and contributions to knowledge within the body of literature and present them in a way that enables the subsequent activity – a critical assessment of the state of knowledge related to the research problem” (Boell and Cecez-Kecmanovic 2014:261). It is an intellectual activity, as the entire body of knowledge is generally extremely large. As such, it is difficult to capture the information on maps or classification schemes and express it comprehensively though succinctly for subsequent assessment (Boell and Cecez-Kecmanovic 2014:261). According to Hart (1998:144), “the purpose of mapping is to systemise the ideas and other important elements identified through analytical reading and present them in a succinct form”.

Coding

Once data has been collected and the researcher is satisfied with the reliability of the instrument and the validity of the research, it needs to be coded and processed to allow for its quantitative analysis (Bless and Achola 1990:107). This is the basic tool for unobtrusive research techniques. In content analysis, coding involves the logic of conceptualisation and operationalisation. The researcher must refine the conceptual framework and develop specific methods for observing information in relation to that framework (Babbie 2001).

According to De Vos (1998 in Auriacombe 2007:440) “coding represents the operations by which data is broken down, conceptualised and put back together in new ways. It is the central process by which theories are built from data”. Strauss and Corbin (1990) went further by developing a systematic coding process to compare data in a variety of ways. Their developments provided for strict application of a process of open, axial and selective coding. These specifications deviated from Glaser’s point of view that theory would emerge by itself if one worked hard enough with the data (Auriacombe 2009).

For Charmaz (2007:43) “coding means categorising segments of data with a short name that simultaneously summarises and accounts for each piece of data. Your codes show how you select, separate, and sort data to begin an analytic accounting of them”. She adds that, “Coding is the pivotal link between collecting data and developing an emergent theory to explain these data... Through coding, you define what is happening in the data and begin to grapple with what it means” (Charmaz 2007:43).

For Strauss and Corbin (1990) there is a constant interplay between proposing and checking while coding. In addition, there is a constant shift between inductive and deductive reasoning and the data must support the proposed relationships that the researcher has made. Therefore, the final theory is limited to the categories, their properties and dimensions, as well as statements of relationships in the actual data collected.

Categorising

Categorisation is the essence of content analysis. This involves creating meaningful categories to which the unit of analysis can be assigned. Here, the emphasis is on descriptive categories. A content analysis describes a set of data in terms of a set of categories, and how many examples have been counted in each category. That information is usually presented as a summary Table, with the categories forming the columns and the set of data forming the rows. The numbers, which appear in the cells of the Table, are referred to as the frequencies – the result of calculating how often that category occurs in the data set (Auriacombe 2007:460).

Classifying: This level involves verifying that the units of analysis can be assigned easily and unambiguously to the appropriate categories. Here, the emphasis is on replicable and reliable classification. 'Inter-rater reliability' means that several independent 'raters' have been found to be able to classify the units into similar categories than those of the researcher (Auriacombe 2007:460).

Comparing: This level involves comparing the categories in terms of the numbers of members in each category and performing any relevant statistical analysis. Here, the emphasis is on significant comparisons. For example, a speech can be coded as having 135 'competition' references and three 'cooperation' references (Auriacombe 2007:460).

Concluding: This is the highest (and, often most controversial) level of content analysis. It involves drawing theoretical conclusions about the content in its context. At this level of analysis, the context of any type of communicative content is important. Here, the emphasis is on drawing theoretical conclusions (Auriacombe 2007:461).

CONCLUSION

In this article, different aspects and types of unobtrusive research techniques were discussed, while conceptual analysis, content analysis and historical/comparative analysis were clarified as research techniques. Unobtrusive measures can be both quantitative and qualitative in their uses. As with other research methods, they have their own strengths and weaknesses. Content analysis and analysis of existing data can be highly quantitative, while historical/comparative analysis is generally a qualitative method.

Social scientists rely mostly on reactive research methods, as opposed to unobtrusive research measurements. In other words, in many social science research projects, the researched person is aware of being studied and reacts to stimuli or questions presented by the researcher.

Importantly, unobtrusive measures involve the process of studying social behaviour without affecting it. With the exception of qualitative field research, all other modes of observations require the researcher to intrude to some degree on whatever is being studied. This aspect of intrusion is the main difference between obtrusive and unobtrusive measures.

The article does not assume that correct or ultimate understanding can be achieved in terms of triangulating these techniques with other research methods, but instead is interested in the process of developing a general understanding of other methodological approaches to improve theoretical foundations of scholarly work. The nature of the process on how



to apply unobtrusive research techniques is still subject to debate and specific aspects are typically either over or under-emphasised (cf. Boell and Cecez-Kecmanovic 2014:258).

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AUTHOR'S CONTACT DETAILS

Prof C J Auriacombe

Director: Centre for Public Management and Governance
P O Box 524
University of Johannesburg
Auckland Park
2006
Johannesburg
Tel.: 011 559 2385
Cell: 0834633646
E-mail: christellea@uj.ac.za